



FRIDAY, AUGUST 15, 1879.

Old Locomotive for the Camden & Amboy Railroad.

The engraving published herewith is made from an old lithograph, for the use of which we are indebted to Mr. W. S. G. Baker, of Baltimore. We regret that our information about these engines is not more full and exact, and hope that some of our readers may be able to supplement it with more complete data. Seven engines of a similar design were built for the Camden & Amboy Railroad, and were designed, it is believed, by Mr. Robert Stevens, probably with the cooperation of his brother, Edwin A. The engine represented by the engraving was built by Norris Brothers, of Philadelphia. The numbers of those on the Camden & Amboy road were 28, 29, 30, 31, 32, 37 and 38. The date when they were built we have not been able to ascertain, but some of them were in use before 1848. No. 28 had 13x34-in. cylinders and 8-ft. driving-wheels. The fire-box was 6 ft. long and the boiler had 110 2-in. tubes 14 ft. long. Nos. 29 to 37 had cylinders 13 in. diameter x 38 in. stroke, and No. 38 had 14-in. cylinders. All the engines were coal-burners ex-

cepting No. 37, which was a wood burner and had 7-ft. driving-wheels. Nos. 37 and 38 had wrought-iron driving-wheels with wrought-iron tires. The rest of the engines had cast-iron wheel-centres and wrought-iron tires. The spokes had an H section, and the space between the wheels was filled up with blocks of wood to prevent them "from raising the dust." The truck-wheels were 36 in. diameter, with wrought-iron tires. All the engines had separate cut-off valves with some form of hook motion, but this differed in the different engines.

The chief trouble with the engines was that they would not make steam, and, what was very curious, it is said that there was more trouble in making steam when they ran "light" or alone without a train than there was with a train. They were also very slow in starting, although when once under headway, have run at the rate of a mile in 53 seconds.

For the above information we are indebted to Mr. Sam. Dougherty, who at one time was Master Mechanic on the Camden & Amboy line. The engines were all ultimately rebuilt with four driving-wheels 6 ft. in diameter.

If any of our readers can give us more complete information, we would be glad to receive it, and place it on record for the future historian of American locomotives.

Contributions.

Objections to Screw Reversing-Gear.

KANSAS CITY, July, 1879.

TO THE EDITOR OF THE RAILROAD GAZETTE:

In the number of July 25, mention is made of screw reversing-gear, and cuts of the same are given to show their make-up. The objection which is generally made in this country to the use of screw reversing-gear is that it is not quick enough in its action. Yes, I should say that was a good and true objection. To combine the screw and reverse lever together is to create a useless expense, create numerous pieces and parts to repair, and no results from all this that cannot be obtained by the simple, common reverse lever. Should

a notch in the sector be too much and the next one back be too little, the throttle could be eased off a little. As to the saving in coal or wood by the use of such an expensive complication as the screw reversing-gear, I doubt very much if the saving of fuel will balance the cost of construction. I agree with the master mechanic who has been studying this complication. The question of time is of much importance. I saw one engine some years ago built with a direct-action screw-gear reversing arrangement; but it did not prove its worth over the common lever enough to keep its place more than a year or so. The unhandiness of the idea, the handiness of the oily screw to leave its size and pitch of thread upon the clothes of the engineer as he leaned out of the cab-window—all go to convince one that has been there that it would not be extremely profitable to throw away the existing reversing-gear and substitute this screw reversing-gear. If it is on a question of fuel-saving that you argue this, I would like to suggest that during my year or two on the foot-board I learned that even with all the improvements now known to save fuel, careless, no-judgment firing, rather than coal or wood, will in almost every case prove that there is no saving by using said So-and-So's improvement.

As to the engine I refer to as being built with this screw reversing-gear, I would refer to the Chicago, Milwaukee & St. Paul Railway, James Lowery, Superintendent of Motive Power. The engine in question was built in the North Milwaukee shop about 1889, or perhaps 1868. No. 60 was her

criminate property, and that in the one essential particular of bolts and nuts there is no attempt made for securing uniformity, then it would appear necessary that something should be done toward bringing about that most desirable result.

In the year 1870 this Association felt the necessity of taking measures for the acquiring of a standard thread, and in the year following, a report embodying a standard pitch of thread, and also a standard for widths and thickness for bolt-heads and nuts was submitted and emphatically adopted by this Association.

This standard was the one previously adopted by the Franklin Institute, in December, 1864, and recommended by that body for general adoption as the American standard.

The following is a copy of the resolution adopted by the Franklin Institute:

"Resolved, That the Franklin Institute of the State of Pennsylvania recommend for general adoption by American engineers the following forms and proportions for screw-threads, bolt-heads and nuts, viz:

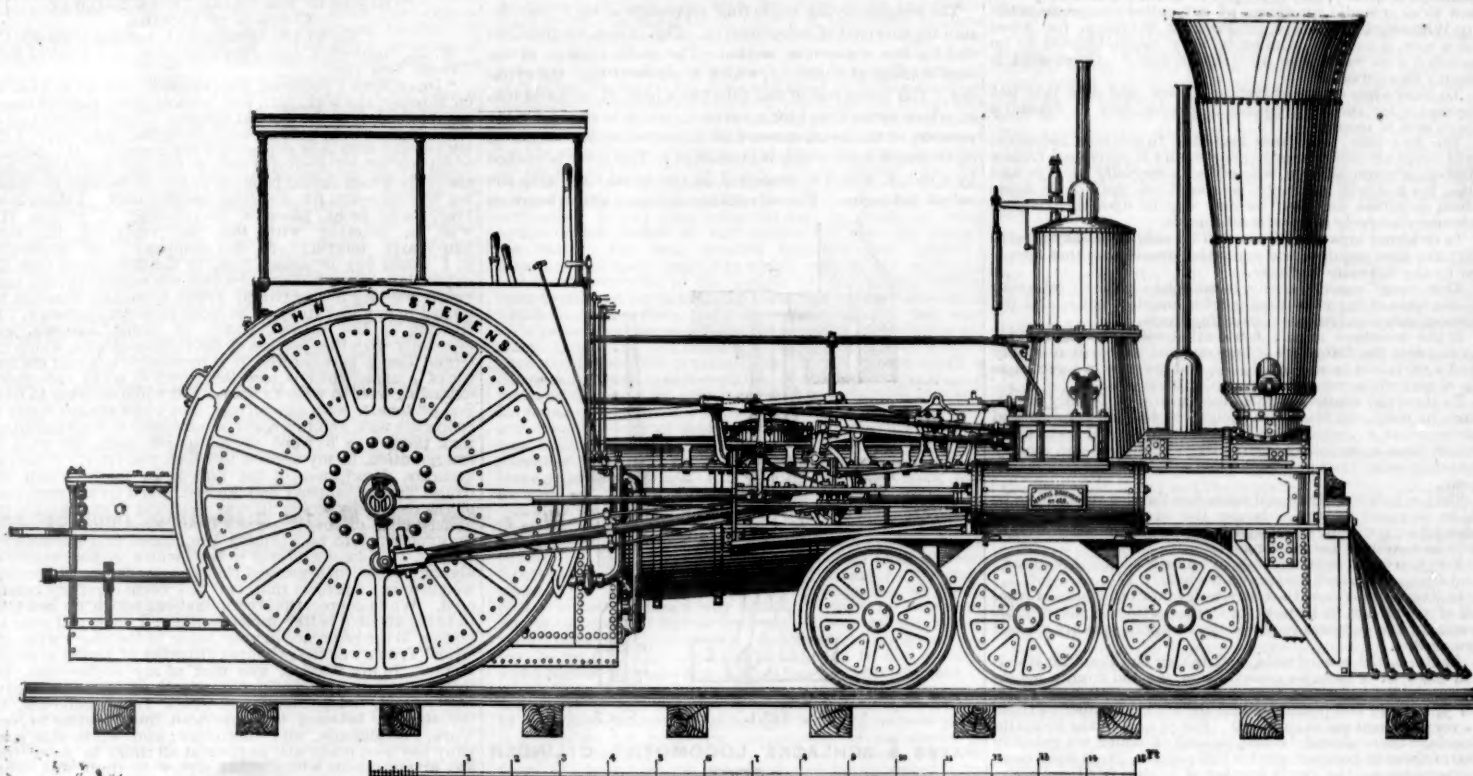
"That screw-threads shall be formed with straight sides at an angle to each other of 60°, having a flat surface at the top and bottom equal to one-eighth of the pitch.

"The pitch shall be as follows, viz:

Diameter.....	1/4"	5-16"	3/8"	7-16"	1/2"	9-16"	5/8"	3/4"	1"	1 1/4"	1 1/2"
No. threads per inch.....	20	18	16	14	13	12	11	10	9	8	7

NOTE.—This table extends further, to bolts 6 inches diameter, which is unnecessary for car builders.

"The distance between the parallel sides of a bolt head



OLD LOCOMOTIVE FOR CAMDEN & AMBOY RAILROAD.

number, I think. However, the readers of the *Gazette* would be pleased to hear from Mr. Lowery on this subject, giving his experience why this screw reversing-gear was taken out to be replaced by the common reverse lever. I read the *Gazette* every time I can borrow a copy, and thus far have never seen anything from the pen of Mr. Lowery. His experience for the past 15 years or more with such a road as the Chicago, Milwaukee & St. Paul ought to be interesting to the readers of the *Gazette*. H. KINGSLAND.

Standard Screw-Threads.

At the last convention of the Master Car Builders' Association, the following report was presented for the Committee on Screw-Threads and Nuts:

To the Master Car Builders' Association:

GENTLEMEN: Your committee appointed at the last convention "To investigate and report on the present construction of screws and nuts used on cars, and the amount of accuracy that it is desirable to secure, and the best means of maintaining it in the standard adopted by the Association, in Richmond, Va., June 15, 1877," respectfully submit the following report for your consideration:

Among the appliances required in the construction of a good and substantially made car, there are none of greater importance than that of properly proportioned bolts and nuts.

And when it is considered that these are profusely used over all parts of the car, it certainly appears unnecessary to remark that they, of all parts, should bear the stamp of uniformity. That is to say, every bolt professedly of the same diameter of screw, should be interchangeable, so far as the fitting of nuts of professedly the same size is concerned.

This desideratum can be obtained easily if bolts and nuts are screwed to one gauge, no matter what form of thread may be adopted, so long as the size and pitch of thread be uniform.

In dealing with the construction of one car, or any number of cars built by or for any one or more companies, so long as the bolts and nuts fitted each other accurately, and the threads were of a shape that would hold well, there might be no reason to question their suitability, and hence there would be no necessity for reporting on the subject.

But when experience steps in and calls attention to the fact that there are numerous parties manufacturing cars by the hundreds and thousands, and that these cars are traversing the whole continent, becoming in a certain sense indis-

criminate property, and that in the one essential particular of bolts and nuts there is no attempt made for securing uniformity, then it would appear necessary that something should be done toward bringing about that most desirable result.

"The thickness of the heads for rough bolts shall be equal to one-half the distance between their parallel sides.

"The thickness of the nut shall be equal to the diameter of the bolt.

"The thickness of the head for a finished bolt shall be equal to the thickness of the nut.

"The distance between the parallel sides of a bolt-head and the thickness of the nut shall be one-sixteenth of an inch less for finished work than for rough."

The following is a table showing the diameter of bolts, number of threads per inch, width of rough bolt-heads and nuts between parallel sides and sizes of holes in nuts to correspond with bolts:

Diameter of bolt.	No. threads per inch.	Width of heads and nuts.	Holes.
1/4"	20	1 1/2"	1 1/8"
5-16"	18	1 3/4"	1 1/4"
3/8"	16	1 7/8"	1 1/2"
7-16"	14	2"	1 3/4"
1/2"	13	2 1/8"	1 7/8"
9-16"	12	2 1/4"	2"
5/8"	11	2 3/8"	2 1/8"
3/4"	10	2 1/2"	2 1/4"
1"	9	2 7/8"	2 3/4"
1 1/4"	8	3 1/8"	3"
1 1/2"	7	3 1/4"	3 1/8"
1 3/4"	7	3 1/2"	3 1/4"

Now, considering the great intercourse and interchange of traffic that has taken place of late years, and the natural interchange of cars belonging to the numerous companies from the extreme parts of America, and the economical advantages to be derived from the assimilation of the chief details of cars most liable to be injured or disarranged, and above all may be mentioned the bolts and nuts, it seems almost inconceivable that the Master Car-Builders themselves, who have to effect the repairs and renewals needed, should not have secured a greater uniformity of construction generally, and especially in reference to the simple matter of bolts and nuts.

Although the Franklin Institute or American standard was accepted and published in 1871 by the Master Car-Builders as their adopted standard, yet we find that in the

present year, 1879, they are actually working without a standard.

One has a sharp V thread, another has a thread with a rounded top and bottom, another a flat top and bottom thread, and still another with an indefinite thread, amounting to almost no thread at all, for it neither has depth nor pitch, nor resisting surface fit for railroad or any other service.

Taking them with their defects, as we too often find them, some $\frac{1}{2}$ in. smaller than the true gauge, while others are $\frac{1}{2}$ in. larger, they present a conglomeration, to say the least, as very remarkable and very undesirable.

Many, if not all of us, have experienced troubles caused by these bolts and nuts with no threads and loose fits, in the dropping down of brake-beams, draw-bars, truck framing and many other parts, which all here too well understand to require their particularizing.

It devolves upon your committee to speak very plainly on this subject, and point out the remedy.

This is found by simply carrying out in its entirety the standard which you have already approved and accepted, viz.: The Seller threads and the Franklin Institute sizes of bolt-heads and nuts.

Unlike the thousand-and-one car couplers patented, there is no royalty to pay for the use of this Franklin standard.

Besides the question of pitch and form of thread, there is that of gauge size.

As already stated, we find the screws of bolts and nuts varying in diameter in some cases to the extent of $\frac{1}{16}$ of an inch, and yet they are called by the same designation, viz.: $\frac{3}{8}$, $\frac{1}{2}$, or $\frac{3}{4}$, as the case may be.

The fact is this, many makers of screwing tools evidently use rule of thumb gauges, and if they can approximate somewhere about the true size, they think it is "near enough."

These "near enough" makers do not appreciate mathematical accuracy, and it is open to doubt whether they ever saw those splendid specimens of art called gauges, as made by Whitworth, or Sellers, or Pratt & Whitney, for when once seen, a conscience must be very much blunted to be satisfied with work done by "thumb rule." Guess-work is nearly its equivalent.

To secure this standard system of taps and dies, it is not necessary for the requirements of car-builders to expend a large sum of money.

The five sizes, say from half-inch to one inch inclusive, will cover all that is usually needed, and if purchased from a first-class manufacturer, who makes a specialty of taps and dies, the cost will probably be found less than if we made them ourselves, and then we may depend upon securing an accuracy scarcely otherwise attainable.

In ordering taps and dies it will be only necessary to specify the sizes required and name the standard as that adopted by the Franklin Institute.

This report would scarcely be complete without referring to the sizes of bar iron obtained for making bolts, and the sizes of nuts received from manufacturers.

If the members of this Association will take the trouble to measure the diameters of bars ordered they will probably find a variation in size equal to $\frac{1}{32}$ and perhaps in some cases $\frac{1}{16}$ of an inch larger than the size ordered.

To show the results of such inaccuracy it is only necessary to point out the extra weight to be paid for over and above what a correct sized bar or nut would cost, from which those companies ordering large quantities can readily ascertain what they pay for useless weight in the course of a year.

Taking bolt iron first, and assuming the size required to be $\frac{3}{8}$ in. diameter, if it is $\frac{1}{32}$ larger the extra weight will be about 10½ per cent. more, and for $\frac{1}{16}$ larger the extra weight will be nearly 21 per cent. more.

For $\frac{3}{8}$ iron an increase of $\frac{1}{32}$ of an inch adds 8½ per cent., and for $\frac{1}{16}$ of an inch larger it adds nearly 17½ per cent.

In like manner runs the extra weight for other sizes of iron, all of which has to be paid for in proportion to the weight, while for the purposes required the standard sizes are all that are needed.

Again, in the case of nuts, and taking the Franklin standard sizes as a basis for computation, we find from a manufacturers' list before us, that there should be 738 square nuts for $\frac{3}{8}$ bolts in 100 pounds, while the actual number of those in very general use is only 440. For $\frac{1}{2}$ nuts of the Franklin standard there should be 420, instead of which we get only 290 of those in common use for 100 pounds. From these comparisons we see the loss in number of $\frac{3}{8}$ nuts is 41 per cent., and of $\frac{1}{2}$ nuts 38 per cent., and this loss can be prevented by simply conforming to the Franklin Institute standard.

It is unnecessary to extend this report further after so fully demonstrating the many advantages and the economy which would result by carrying out in its integrity the standard threads in combination with standard sizes for bolts and nuts.

Every member is more or less interested in the subject, and in these days when the interchanging of cars is the rule, and members are expected to treat foreign cars as their own, its needs must be admitted that the sooner a general uniformity is adopted and maintained in practice, the better for all concerned. Respectfully submitted,

JOHN ORTON,
Canada Southern Railway.

Rules for Inquiring into Railway Accidents.

The government of India lately published a set of rules and regulations for the guidance of officers in charge of state railways for inquiring into and reporting upon any serious accidents that may occur. These rules have been forwarded to the managers of all state railways for adoption, and to the agents of other lines of railway for their information. Serious accidents, according to the order, are such as are attended with loss of life or limb, or loss or injury to passengers traveling or being on the railway, and accidents that may cause large loss of public or private property. On the occurrence of an accident of this nature, the station-master nearest to the scene will telegraph the particulars to the Railway Police Superintendent or to the officer in charge of the nearest police station and to the magistrate. The manager of the company will forward to the Consulting Engineer for Railways, or to the Director of State Railways, a report of the accident, and to the Secretary to Government in the judicial department. The first named officer has been authorized by the government to investigate and report upon all such cases, and the intimation to the judicial department is to be made with a view to the government watching the investigation. The manager of the company will hold a thorough departmental inquiry into the cause of the serious accident, he shall cause the particulars to be forwarded to the magistrate with a list of persons whom it is intended to prosecute; it will also be the duty of the manager to bring to justice all railway subordinates guilty of breaches of rules calculated to cause serious accidents, and the Superintendent of Railway Police will prosecute all those whom it may be decided to bring before the magistrate. Every arrangement will be made to facilitate the movements of medical, police and magisterial officers to the scene of the accident, and facilities afforded them for conducting inquiries. All arrests to be made after the investigation,

and the manager shall require the attendance at the court or place of inquiry of any officer of the railway whose attendance may be necessary. To enable station officers to communicate without delay with a magistrate upon the occurrence of an accident, each railway station will be furnished with a list of magistrates having jurisdiction over the place where the station is situated, and a list of railway officers to whom a summons may be sent for service. A monthly list of railway accidents will be furnished to the Director of State Railways. The rules embrace provisions for the guidance of officers of the railway and district police, and where there is no railway police, the duties imposed on it will be discharged by the district police. When the railway police officers are inquiring into the nature of any accident at a station, the district police shall render them every assistance; the prosecution will, however, have to be conducted by the railway. The rules contain provisions for the guidance of magistrates who may be required to be present at the inquiry. If the magistrate does not proceed to the scene, he will depute a subordinate magistrate to make the inquiry or the district police to do so. All civil medical officers belonging to the district will attend the scene of the accident, to render assistance and to give evidence at the magisterial inquiry. If, during the inquiry the magistrate wishes to have the opinion of the Consulting Engineer for Railways, or other professional persons, he shall be at liberty to summon the attendance of such, the magistrate to prosecute persons liable in case the manager of the railway fails to do so. The Government Director or Consulting Engineer in reporting to government the particulars of the accident, and the causes which led to it, will state what measures have been taken to prevent their recurrence, and whether any further action is desirable.—*Madras Standard*.

Hayes and Schlacks' Locomotive Cylinder Cock.

The accompanying engraving represents a very neat design for this part of a locomotive. Fig. 1 is a longitudinal and fig. 2 a transverse section. The main portion of the cock consists of a tube, A, which is screwed into the cylinder. The lower end of this tube has a plug, B, screwed into it, which forms a seat for a valve, C, which is closed by the pressure of the steam above and is opened by the action of an eccentric lever which is pivoted at f. This lever is worked by a rod, E, which is connected in the usual way with the cab of the engine. The valve C has a stem, s, which bears on

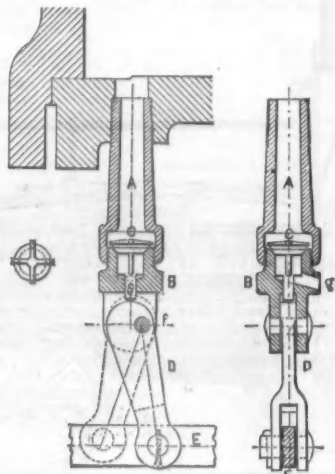


Fig. 1.

Fig. 2.

HAYES & SCHLACKS' LOCOMOTIVE CYLINDER COCK.

the eccentric. When the latter is moved into the position indicated by the dotted lines, it lifts the valve, and the water in the cylinder then escapes by the opening g in the usual way. This form of cock has the great advantage that the seat and the valve can be readily removed and reground without disturbing the joint which is made with the cylinder.

This device has been patented by Messrs. George Hayes and Henry Schlacks. The address of the latter is at the shops of the Illinois Central Railroad, Chicago.

Correspondence between Mr. Wm. H. Vanderbilt and Sir Henry Tyler.

The following is a letter from Mr. Vanderbilt, written in reply to some remarks of Sir Henry Tyler, at the recent meeting of the proprietors of the Grand Trunk Railway, on the injurious effects of the competition of the New York Central and its allied lines under the control of Mr. Vanderbilt:

"NEW YORK CENTRAL & HUDSON RIVER RAILROAD COMPANY, GRAND CENTRAL DEPOT, NEW YORK, June 16, 1879.

"Sir Henry W. Tyler, President Grand Trunk Railway, London, England:

"DEAR SIR: On my arrival in London, your speech of April 29, in the half-yearly meeting of the Grand Trunk Company of Canada, was placed in my hands. I read it with care, and was greatly surprised at its reflections upon me and the companies of which I am President. You must have been grossly misled as to the facts to make these deliberate and specific statements of bad faith on my part. The allegations upon which your conclusions are based are incorrect. The troubles from which your company has suffered are common alike to all the trunk lines.

"Excessive competition produced unremunerative rates, but no one has worked more diligently than myself to restore harmony and paying prices. I did this when the Grand Trunk was the principal disturber of traffic arrangements, and have continued it since. My interests are too large in railway properties for me to be otherwise than conservative and anxious for their prosperity. That the Grand Trunk failed to get business at paying rates is not singular, when all lines were in precisely the same condition. But there has not been a time since I assumed control of the Michigan Central when the Grand Trunk and Great Western and Erie have not received precisely the same treatment over this line as the New York Central, or any other road. Indeed,

the General Traffic Manager of the New York Central has repeatedly complained to me that the Michigan Central favored the Grand Trunk, while the Grand Trunk has never notified me of any dissatisfaction on this question.

"The 'International Line' was broken by the withdrawal of the New York Central long before I came into possession of the Michigan Central, and before at the time the competition of the Grand Trunk was, in our judgment, so unfair and ruinous that we could not be in friendly alliance.

"After my interview with your General Manager and Mr. Seargeant, I gave full instructions to Mr. Ledyard, of the Michigan Central, in accordance with the assurances made to your company, and those instructions have never been violated. The Erie officers have examined and reported that the action of the Michigan Central in the matter of the Erie & North Shore line was entirely fair and impartial.

"The Michigan Central has not contracted freight by the New York Central, and, at the same time, refused to do so for the Grand Trunk, and if Mr. Seargeant was satisfied by actual test that the Michigan Central was charging higher rates by the Grand Trunk than by the New York Central, why did he not report the fact to Mr. Ledyard or to me? It seems, on a fair review of the situation, that your officers in Canada, in their efforts to explain the losses incident to excessive competition alone, have reported grievances which have no existence, and injuries of which they have never complained or sought the correction.

"It is a serious matter to make such charges affecting my character before a body so respectable and honorable as your shareholders, and I have the right to demand that the reputation shall be as public as the accusation. I trust that you will therefore read this communication at your next meeting on the 30th inst. Very respectfully yours,

(Signed) W. H. VANDERBILT, President."

The following reply was sent by Sir Henry Tyler to Mr. Vanderbilt on July 10:

"OFFICES OF THE GRAND TRUNK RAILWAY COMPANY OF CANADA,

No. 21 Old Broad street, London, July 10.

"W. H. Vanderbilt, Esq., President, New York Central Railroad, New York:

"DEAR SIR: I received your letter of June 16 at 11 a. m. on Monday, the 30th ult., and noticed your request that I should read it at the special meeting of the proprietors of this company to be held at one o'clock the same day. I did not comply with that request for two reasons: (1). Because it did not afford my board time to consider your letter, and the reply which should be made to it; (2), because the meeting was convened for a special purpose only. I shall, however, have great pleasure in reading it, if you still wish it, together with this, my reply, at the next half-yearly meeting of the company. In answering it, I would beg to assure you, in the first place, that the expressions in my address to which you refer at the last half-yearly meeting of the Grand Trunk Company were not intended in any way to apply to your personal character. In treating of the railway policy of North America, and especially with that portion of the Continent with which the Grand Trunk is connected, it is impossible to avoid the free use of a name which is associated with so many enterprises extending over so wide an area. But while desiring to treat you personally with all courtesy, and while always ready to cooperate with you in a spirit of conciliation, I cannot admit that there was a word of misapprehension, or even of exaggeration, in my address to which you refer. It was an accurate description of the difficulties under which the Grand Trunk Company had labored, and a frank statement of the means by which it was proposed to emancipate the undertaking of that company from what had been proved by experience to be a highly prejudicial and burdensome control. I did not set forth a fact which is not capable of absolute proof, an argument that had not been carefully considered, while deprecating recriminations which do not tend to bring about a better understanding. I must call your attention to the reference in your letter to the time 'when the Grand Trunk was the principal disturber of traffic arrangements.' In my opinion, and that of my co-directors, the most important and continuous reductions in the rates have been caused, independently of Grand Trunk influence, by the struggle between the American lines leading to New York, Philadelphia, and Baltimore; and while this company has been ready and anxious at all times to enter into any arrangements which would secure to itself and other lines reasonable proportions respectively of the through traffic, it is apparent from its position, as compared with the other trunk lines, that it has only been able in the past to exercise a very limited influence over the through rates. Confirmatory evidence of this proposition is unfortunately to be found in the present state of affairs. Though the Grand Trunk has now been for some time dependent for through traffic almost entirely upon lines controlled by yourself, yet the rates for that traffic have never been so low as during the last two months. Seven and a half cents (less than half the cost of carriage) has recently been the ruling rate for 100 lbs. from Chicago to New York, in consequence, not in any way of Grand Trunk action, but of disagreement between the New York Central and Pennsylvania interests. If the influence of the Grand Trunk Company has been so injuriously felt in the past as might be inferred from your letter, a contrary effect might reasonably have been expected, now that your action has so effectually deprived that company of any independent influence over through traffic and through rates. With regard to the 'International Line,' established by agreement, dated Dec. 15, 1872, for the purpose of exchanging business with the New York Central, you are clearly mistaken in your statements as to 'its having been broken up long before I (you) came into the possession of the Michigan Central.' This line was, in fact, broken up on May 30, 1878, by notice given on the part of the New York Central Company, and before the end of the following month of June the new board of the Michigan Central was elected, giving you the control of that undertaking, while about the same time you purchased a controlling interest (to which you do not refer in your letter) in the Chicago & Northeastern Railroad, a mere link in the Chicago & Lake Huron Railway, and our only then remaining means of independent connection with Chicago, and you thus virtually broke up our Great Eastern fast-freight line organization and destroyed our through traffic by that route. Between May and June, 1878, a series of obstructive orders were issued by the executive officers of the New York Central Company. Grand Trunk cars were ordered to be returned empty to Black Rock; local rates were to be charged on Grand Trunk traffic; former divisions were to be canceled; no interchange of through traffic was to take place on the former and usual basis; and, in fact, it was stated (as indeed was apparent on the face of these orders) that the intention was to put an end to all interchange of traffic with the Grand Trunk Company. Though these orders were afterward disavowed by yourself on your return to the United States, on the ground that your officers had misunderstood your instructions, they indicated in a manner most alarming and significant to the directors of this company the view taken by the officers under your own immediate control of your policy in connection with the purchase of the Michigan

Central; and the effect of your own action was unmistakably apparent when, by purchasing the Flint & Lansing section, already referred to, you virtually destroyed our connection with Chicago via the Chicago & Lake Huron Railway. The officers of the lines controlled by you have continued to act, more or less, on such an interpretation of your views, and we have not received, since you purchased the control of the Michigan Central road, the share we formerly enjoyed at Detroit of traffic from that road.

"In my speech on April 28, to which you refer in your letter, I stated that in the half-year ended Dec. 31, 1878, the Grand Trunk had lost 106,900 tons and \$457,000 in receipts from traffic mainly received at Port Huron and Detroit, i. e., from the Chicago & Lake Huron and Michigan Central companies, and the reduction in our total ton-mileage was 40,800,000. Whatever your good intentions, this was, in fact, the result to us of your action, and the proceedings of your officers. And I might have added, on the other hand, that the Michigan Central for the year ended Dec. 31 last, as per published accounts, shows an increase in the through trade carried eastward, i. e., to Detroit, of 82,000,000 ton-miles or nearly one-third (32 per cent.) over their eastward bound traffic of the preceding year.

"With these facts before me, I am at a loss to understand what meaning you wish to be attached to the following expressions in your letter:

"The troubles from which your Company has suffered are common alike to all the trunk lines."

"That the Grand Trunk Company failed to get business at paying rates is not singular when all lines were in precisely the same condition."

"It seems on a fair review of the situation that your officers in Canada in their efforts to explain the losses incident to excessive competition alone, have reported grievances which have no existence."

"The results of the working (as published) of the principal lines controlled by you lead to an entirely different conclusion from that which would be inferred from your expressions just quoted. In all cases the improved results over preceding years are attributed to the great increase of freight traffic, although the rates have been, we shall both agree, either unremunerative or unreasonably low.

"Taking the New York Central accounts for the year to 30th September, 1878, it will be found that the passenger mileage was lower than in any of the preceding nine years, while the freight ton-mileage was increased enormously. This increase amounted to no less than 464 millions of ton miles, or nearly 29 per cent. more than in the preceding year, about the same proportion as the increase on the Michigan Central 'through traffic,' while the net revenue was increased by \$1,100,000, and reached an amount only twice slightly exceeded in the last ten years. So much was this the case that the editor of the *Railroad Gazette* of New York states that the satisfactory income 'enjoyed by this road (the New York Central) causes it to be the greatest obstacle in the way of any considerable advance in the rail freights.' I have already referred to the great increase in 1878 in the 'through' ton-mileage of the Michigan Central. This was also accompanied by a decreased passenger-mileage, while the net revenue is shown to have been greater than it has been before, being \$452,000 more than in 1877.

"On the Lake Shore & Michigan Southern a similar result is produced—decreased passenger-mileage and greatly increased ton-mileage, with an increase in net earnings over the preceding year of \$950,000.

"On the other hand, the through freight traffic of the Grand Trunk has been steadily diminishing since the middle of last year, when you purchased the Michigan Central Railway, though during the last five years there has been expended about \$10,000,000 in assimilating the gauge of this line to that of the Michigan Central, providing rolling stock and otherwise enabling the Grand Trunk to obtain a fair share of the business to the seaboard.

"Following up other advances in the same direction, direct application was made to you so long ago as October, 1878, with a view to an understanding in respect to the whole of the traffic passing the Detroit and St. Clair rivers to competitive points east, but to that application no reply was received.

"I have to express my regret at not having met you when in America. Shortly after my arrival in New York, I was obliged to proceed to Canada on important business, and your visit to England immediately after prevented my having an opportunity of meeting you, while the necessity of my being in London a few days before our special meeting on the 30th of June prevented my awaiting your return to New York. I am, dear sir, yours faithfully,

"H. W. TYLER, President."

The Discontinuance of Special Contracts.

Circular No. 63, from the office of the Chairman of the Joint Executive Committee, gives, as follows, the result of the vote on discontinuing the special contract system:

"The proposition contained in Circular No. 46, 'To discontinue hereafter the practice of contracting for any special or given lots, blocks or quantities of freight, at tariff rates, or at less than tariff rates, to the seaboard, on home or foreign business, and to give ten days' previous notice of any increase in the tariff,' has been adopted unanimously by the Joint Executive Committee, in which the following railroad companies are now represented:

Atlantic & Great Western.
Baltimore & Ohio.
Boston & Albany.
Canada Southern.
Central Vermont.
Chicago & Alton.
Chicago, Burlington & Quincy.
Cleveland, Columbus, Cincinnati & Indianapolis.
Grand Trunk.
Great Western.
Indianapolis, Cincinnati & LaFayette.
Indianapolis & St. Louis.
LaFayette, Bloomington & Muncie.
Lake Shore & Michigan Southern.
Marietta & Cincinnati.
Michigan Central.
New York Central.
New York, Lake Erie & Western.
Ohio & Mississippi.
Pennsylvania Railroad.
Pennsylvania Company.
Toledo, Peoria & Warsaw.
Vandalia Line.
Wabash.
Illinois Midland.
Louisville, Cincinnati & Lexington.

"The practice of making special contracts has heretofore been in the way of maintaining the established tariffs, and of securing equal rates to all shippers for similar services performed.

"The above action is taken by the Joint Executive Committee in the interest of the railroad companies, as well as in the interest of the shippers; and it is important that the managers of the roads represented on the Committee should

see that the agreement is strictly adhered to by all their agents and agents of connecting roads.

"Notice is hereby given to all connecting roads, not represented on the Joint Executive Committee, that the roads named above will not be parties to special contracts, and will exact their full proportion of tariff rates.

"Any violation of the above agreement should be promptly reported to this office for investigation, in order that the responsibility for breaking the agreement may be determined.

"ALBERT FINK, Chairman."

Logging and Other Light Railroads.

In reply to a correspondent making inquiry as to the "cheapest and best way" to build a tramway to get logs to a river, the *Northwestern Lumberman* has published the following, which may be of service to others than lumbermen, who wish to know how to provide the cheapest possible railroad for a light or temporary traffic. It is noticeable that wooden rails are condemned, though they are cheaper in lumber districts than anywhere else:

For short hauling, say one to three miles, wooden track roads have been adopted by many lumbermen, with varying opinions as to their utility, taking into consideration the various questions of economy of construction, cheapness of operation, and conditions of practicability, with more especial reference, in the latter, to the annoyances incidental to cheap roads, and expense of repairs. Wooden roads are cheaply built so far as first cost is concerned, and various modes have been adopted, none of which, so far as we have been able to learn, have equalled the expectations of their projectors. One style of those roads, and the cheapest, is to take round poles, and joining their ends by pins, stretch them over a rough grade, the truck-wheels being concave on their face, keep the poles at the proper distance apart. In this style of road it is preferable to allow the axle to revolve in the boxing, and the wheels also to revolve on the axle, as by this means curves are more easily followed. The cost of such a road depends upon the amount of grading necessary, the poles and labor of joining together being dependent upon the ease with which the one is obtained and the skill of the laborers in making pins and boring holes. Such a road can be used with steam power if one is prepared for the annoyance incident to pins breaking and dropping the engine and cars off the track, but is usually operated with horses, in which case annoyance enough to test the temper and funds of the lumberman will probably be experienced. A very good tramroad may be made by using square or flat timber of any convenient size, the larger the better, the ends scarfed together and pinned; these are laid upon rough logs which may be six or twelve feet apart, according to the length of the timber resting upon them, and act as ties. In these ties "spots" are cut in which the timber rests, and a strong two-inch pin will bind all together, the pin and "spot" preventing spreading of the track. Upon the long timber, 4 x 6, rails of maple or other hard wood are spiked or pinned, but if you would avoid a constant splintering and cracking of the rails, breaking of pins and dropping of cars between the rails, light iron will be found to be but of comparatively little more expense, and the difference of repairs alone, in lumbering three or four million feet, will overcome this difference, while the decreased friction, enabling either by horse power or steam, largely increased loads, will, in the increased work performed, soon more than pay the difference.

A road built upon the plan last described, and ironed with 20 or 25-pound T rail, is economical and efficient, either with horse power or steam, requires no elaborate grading and is suited, in the use of proper cars, for hauling loads of from 2,000 to 3,000 feet of green logs, and would be the road which, from personal experience and observation, we should choose to build, unless a long distance was to be traversed, and the quantity of logs, or the country traversed, would warrant a more durable structure. In this latter case, a road line may be cut out to any desirable width from 10 feet upward, and a regularly graded bed of 5 to 6 feet in width prepared, on which ties of suitable length will be laid, at distances apart to correspond with the iron to be used, and on these a track of from 36 to 42-inch gauge may be laid. (A narrow-gauge is preferable for lumbering, experience having shown its utility.) This may be operated by light engines, weighing from 4½ tons upward, 16-pound rail being suited to the size named, 20-pound rails for 6½-ton engine, 24-pound rails for 8-ton, and 28-pound for a 9½-ton locomotive; their cost varying from \$2,500 to \$3,500, according to the size and style. For carrying logs of ordinary length four wheel trucks with bolsters and side stakes are usually used, and will cost according to locality, and detail of construction from \$50 to \$150 each, the latter being the cheapest in the long run. Long or short couplings may be made with suitable wooden poles, ironed at the ends to receive the coupling-pins, and long logs may be loaded upon two cars, connected to suit the length.

Wooden rails and sham devices, either in the construction of the track or cars, we consider an invention of the enemy, to deplete the lumberman's stock of patience, and reduce his bank account.

The cost of logging railroads cannot be given accurately to apply to all localities. We append, however, some figures from the article heretofore referred to, which will apply to an iron-track road, subject to modification in varying localities.

Rail, 24 lbs. per yard, weight 85,480 lbs., at \$40 to \$50 per ton, according to location, say \$45.....	\$1,717.23
Cross-ties, 2 feet between centres, 2,640, at 10c.....	264.00
R. R. spikes, 4 per cross-tie, 4½ x 1½, about 4,000 lb., at 2½c. per lb.....	110.00
Splices, allow rails 28 feet long, 378, at 28c. each.....	105.84
Labor, clearing and grubbing and grading, \$400 to \$1,000, say.....	600.00
Labor, track laying, \$100 to \$200, say.....	150.00
Allow logs for cribbing, etc., \$50 to \$200, say.....	100.00
	850.00
	\$3,047.07

No allowance is made for right of way, as the road is supposed to be on the operator's property.

By using a 16-lb. rail, and lighter spikes, etc., about \$500 might be saved; or \$300 by using a 20-lb. rail. A 28-lb. rail would add some \$275 to the estimate. In round numbers, a logging railroad, ready for locomotive and cars, will cost \$2,500 to \$3,500 per mile, according to weight of rail, location and general features of the country.

The cost of hauling on logging railroads is dependent on the length of the haul, the grades to be overcome, the amount of business and the fitness of the equipment and track. To secure the greatest economy on a good road, there should be such a number of cars that the engine need not be kept waiting, but on returning with its train of empty cars, find a loaded one ready.

The cost of operating one locomotive, including the wages of an engineer and a fireman, and the cost of fuel, oil and

repairs is not far from \$6 to \$8 per day. The wages of train-men and track hands and other railroad expenses amount to say \$10 to \$15 per day additional. A liberal allowance for interest on the investment, and depreciation of road and equipment can still be allowed, and logs hauled at a very great saving over any other method. The cost of hauling by a light locomotive runs from 30 to 60 cents per 1,000 feet, including all expenses and interest; the cost of sledding is about \$1 to \$2 per 1,000 feet, and when there is little or no snow may double or quadruple.

THE SCRAP HEAP.

An Ear for Bells.

Rochester brags of a young man named D. P. Hicks, who can distinguish any locomotive on that division of the road by the tone of its bell, and says that railroad men state that this is the only case of the kind they ever knew. Utica has a companion for Mr. Hicks. Daniel Buckley, Jr., son of the well-known private watchman, has "called" every engine on this division of the Central road for the past ten years by its bell. He frequently stands in the door of the *Herald* office, nearly two blocks from the depot, at midnight, and calls off the numbers of two, and sometimes of three, locomotives that may be passing at the time. He has never been known to make an error, and many hundreds of cigars have been won on this faculty by Mr. Buckley's friends. Once he hears the sound of a locomotive bell and knows its number, it seems impossible for him to forget it. He calls the numbers of locomotives that have been in the shop for months, and says he will be able to do the same thing ten years from now. When locomotives have been rebuilt and the bells changed, he calls out "That is old No. — bell on new No. —." Some railroad men can call a few of the bells, but none of them have ever equaled Mr. Buckley's "calling the turn" of the bells.—*Utica (N. Y.) Herald*.

Struck by a Tree.

On the afternoon of July 29 as an east-bound passenger train on the Vandalia Line was running through a sharp thunder storm, a mile west of McKean, Ill., a large tree, shattered by a stroke of lightning, fell on the passing train, striking, fortunately, between the Pullman dining-room car and the coach next forward. The end of the Pullman car was considerably damaged, and that portion of the roof which extends over the platform was entirely demolished. The plate-glass of one of the windows was also pulverized. Strange to say, no one was hurt. The tree was broken in the fall and a portion of it carried on the platform about 300 yards.

Exchanging Passes.

The Manyunk bridge and the Reading Railroad's Columbia bridge are the only existing toll bridges across the Schuylkill. In connection with the former the following pleasant incident is related, illustrating that though a cent is not a great sum of money, the wealthiest at times find themselves without it:

The wife of a very prominent railroad President had been out riding in a carriage up around Manyunk and desired to cross the river to Belmont and the West Park. When her vehicle drew up at the bridge entrance the lady searched her pockets vainly for her pocket-book, but she had not a cent in her possession. She felt embarrassed, to be sure, but she tried the magic of her husband's name upon the sturdy old Scotchman, John Owens, who collected the nickels from the drivers of teams and the coppers from the foot passengers. Raising his hat politely from his head at the mention of the name, he said: "Madam, if I was riding on one of your husband's cars and was so unfortunate as to be without a ticket or any money to pay my fare the conductor would, in all probability, reach up and pull the rope. The train would stop and out I would go. But I'll be more magnanimous. I won't pull the rope over you. You can go on." The accompanying wave of the hand was given with the mien of a sea-side hotel proprietor. The lady thanked him and drove on, much pleased at the courtesy of the bridge-tender. She mentioned the incident to her husband. He found time from the engrossing cares of his colossal enterprises to write a neat letter to the Scotchman, enclosing six cents for the toll and thanking him for his courtesy to his wife. There was one short pithy sentence in the note, which read about as follows: "Whenever you choose to ride over this road 'the bell-rope' will not be pulled over you." This was the railroad man's way of conveying the freedom of his road to the bridge-tender as long as he lives.—*Philadelphia Times*.

Tramps.

Saturday, brakeman Holcomb ordered a tramp out of a car near Wolcott. To his utter consternation, the tramp pulled a revolver and ordered Holcomb in. "Come in here, d—n you, or I'll drop you dead on the rails." Holcomb waived all ceremony and accepted the invitation. The tramp then told him he was a burglar, fresh from a safe-blowing operation, showed him his swag, tools, etc., and backed out of the car at Davenport behind his shooting iron. Afterward came the news that burglars had entered the B. & C. R. & N. office at Iowa City, and blown open a safe, securing between \$45 and \$50. And there is no doubt that the scoundrel who made brakeman Holcomb sit within the car, and to whom he told his story, was one of the safe-blowers.—*D. & M. (Ia.) State Register*, July 30.

A handsome carriage was lately shipped from New Haven on a flat car, carefully covered up with canvas. When it was unloaded in San Francisco, unmistakable evidence was found that a tramp had made the transcontinental trip in it. He was evidently well provided, for he left plenty of scraps behind him. The upholstery of the carriage was seriously damaged by the dirty fellow.

A Strange Accident.

Monday evening at a little after 7 o'clock John Emsley, the engineer on an incoming freight train on the Chicago, Clinton, Dubuque & Minnesota road, broke three of his ribs by a very peculiar accident. While at La Crescent Junction he was reversing his engine, when, by some means, the lever did not catch in the notches for that purpose, but flew back and struck him on the breast with terrible force, the result being the breaking of the ribs, as stated. He was taken from his engine at La Crescent, and Dr. McArthur, of this city, went over to attend him.—*La Crosse (Wis.) Republican*.

Blowing up an Expressman.

On Aug. 10, John Cole, a Boston expressman, presented a check at the Boston & Providence depot in Boston, and received the trunk it called for. As he was dragging it across the baggage-room a loud explosion was heard, and at the same moment the astonished Cole found himself sitting in the street 20 ft. away, with only the strap of the trunk in his hand. He was not badly hurt, but a passing small boy was blown across the street and much bruised. The trunk was blown to pieces, and a valise near by was demolished. Investigation showed that there had been in the trunk a shot-gun, belts and other equipment of a sportsman, with a lot of cartridges and loose powder, and the explosion of the powder did the damage. The owner of the trunk has not presented himself, and there is a dark rumor that the trunk was a deliberate trap for baggage-smashers.



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EDITORIAL ANNOUNCEMENTS.

Passes.—All persons connected with this paper are forbidden to ask for passes under any circumstances, and we will be thankful to have any act of the kind reported to this office.

Addresses.—Business letters should be addressed and drafts made payable to THE RAILROAD GAZETTE. Communications for the attention of the Editors should be addressed EDITOR RAILROAD GAZETTE.

Advertisements.—We wish it distinctly understood that we will entertain no proposition to publish anything in this journal for pay, EXCEPT IN THE ADVERTISING COLUMN. We give in our editorial columns OUR OWN opinions, and those only, and in our news columns present only such matter as we consider interesting and important to our readers. Those who wish to recommend their inventions, machinery, supplies, financial schemes, etc., to our readers can do so fully in our advertising columns, but it is useless to ask us to recommend them editorially, either for money or in consideration of advertising patronage.

Contributions.—Subscribers and others will materially assist us in making our news accurate and complete if they will send us early information of events which take place under their observation, such as changes in railroad officers, organizations and changes of companies, the letting, progress and completion of contracts for new works or important improvements of old ones, experiments in the construction of roads and machinery and in their management, particulars as to the business of railroads, and suggestions as to its improvement. Discussions of subjects pertaining to ALL DEPARTMENTS of railroad business by men practically acquainted with them are especially desired. Officers will oblige us by forwarding early copies of notices of meetings, elections, appointments, and especially annual reports, some notice of all of which will be published.

WHAT SHOULD BE DONE ABOUT PATENTS?

The refusal of the Master Car-Builders' Association, at the last convention, to recommend a certain patented draw-bar, seems to have stirred up a veritable hornet's nest of discussion. The reason for this seems to be two-fold; in the first place, it would have been of considerable pecuniary advantage to the patentee, and possibly some other persons, to have had such a recommendation of that device. That he or they should feel some disappointment, and possibly resentment, toward those who defeated their plan is perhaps human, although, under the circumstances, rather unreasonable. In the second place, the action involves the general principle that no patented invention should be recommended by such associations. Numbers of other inventors, therefore, see that if such a policy is definitely adopted it will be impossible hereafter to secure the aid or the authority of these organizations to aid them in introducing their own devices. Besides the latter motive there is among many patentees and those interested in patents a feeling of party allegiance to their common interests, and they therefore resent any action which seems to be adverse to what they are apt to regard as their rights.

It should be kept in mind, though, that the question of the policy of such associations recommending patented inventions is one entirely separate from that of their value. While an association of this kind, or its members, might have made the highest estimate of the value of an invention, at the same time it might not seem wise to them as an association to recommend it. The question then comes up, why should not an association like the Car-Builders' adopt resolutions recommending any invention which seems to be deserving of it. The August number of the *National Car-Builder* contains a carefully prepared editorial article on this subject, which favors unequivocally the policy of recommending patents and says: "The best plan would be to recommend a patented appliance squarely upon its obvious merits, if they believe it to be a good

thing, and leave its adoption to the roads, who are the authoritative umpires in the matter." In this article the writer has left out of consideration entirely the most serious objection to the policy he advocates, and it is because we believe that it is of such vital importance to the very existence of associations like the Master Mechanics' and Master Car-Builders', that we have returned to the subject again.

The most important and the gravest reason for not recommending patented inventions is that such a policy would at once invite corruption and bribery into "the outer courts," and possibly into "the inner temple" of these associations. Once make it to the interest of patentees to secure votes recommending the adoption of their inventions, for the use of which their letters patent have given them an "exclusive privilege," and does any full-grown man, with any experience whatever in such matters, believe that they would not flock to these meetings for the purpose of using their "influence" to further their own ends? No sweeping assertions are made. It is not said that all patentees would try to buy votes, or that all members would sell theirs. What we do say, however, is that with the associations fairly committed to such a policy, there would be certain to be at each meeting numbers of buyers of votes and probably among the weaker and unscrupulous members some sellers. This would speedily assume the form and proportions of such a scandal that the disruption of the associations would speedily follow. This prognostication is not made on the assumption either that the members are susceptible to the "influences" which some patentees know only too well how to use, but it is made on the broad principle that when you produce a cause an effect is sure to follow. The cause in this case is that when it becomes known that the associations have recommended some patent it at once becomes the interest of large numbers of the holders of such "exclusive privileges" to secure similar action to further their own interests. It certainly betrays great ignorance of the ways of the world to believe that all patentees, to some of whom a recommendation of their inventions would be worth thousands or tens of thousands of dollars, would use only such arguments as a Sunday-school teacher or a scientific lecturer would employ to convince those whose votes were needed to carry through his "little bill." It should be kept in mind that when a man or an association gives its vote and its influence in favor of some private interest the presumption is always that it is for some selfish purpose. Often such judgment is very unjust, but it does not alter the fact that, as the world and the miserable sinners it now contains are at present constituted, in most cases such a verdict is correct. At any rate, worldly people will draw such inferences, and this fact alone, if there were no other reason, would be sufficient cause for those associations avoiding such dangerous ground.

There is, though, a legal aspect to this question, growing out of the liability of railroad companies for accidents due to the use of inferior or inefficient appliances, which was discussed in a previous article on this subject. It is said if the associations give their authority to introduce and recommend certain patented inventions, the railroads become liable for accidents which occur when these appliances are not used; in other words, that if the question came up whether any given device was the best known, the courts would interpret a recommendation of it as evidence that it was the best, and its absence as a want of proper care. If this is the case, it is said then it is not only a reason for not recommending patented inventions, but for not recommending anything. The standard height of draw-bar has been quoted as an instance. With reference to this, the writer in the *Car Builder* says:

"Several years ago the Association established, or rather recommended, a standard height for draw-bars, the object being to secure greater safety and convenience in the running and making-up of trains. *The necessity of a standard height was obvious.* * * Supposing an accident should occur at this present time, in consequence of certain cars not having draw-bars of the prescribed height, why should not the roads owning such cars be legally responsible for personal injuries that might result from such neglect?"

There are probably some questions of law involved here which a layman is hardly qualified to discuss. But it must be kept in mind that what was aimed at in the recommendation regarding height of draw-bar was *uniformity* of height. The specific height of 2 ft. 9 in. was recommended simply as a distance on which all could agree. Supposing the Association had adopted a resolution somewhat as follows, "Resolved, that diversity in the height of draw-bars is a prolific cause of accident to train-men, and therefore railroad companies are recommended to build their cars with draw-bars having a uniform height." Such a resolution would not make the variation in height any more or less dangerous than it was before; all that it would

*The italics are ours.—EDITOR RAILROAD GAZETTE.

do would be to supply evidence in convenient form which could be used in court. But this would be of very little importance, because a plaintiff would have little difficulty in proving that variation in height of draw-bars was dangerous by other evidence. When the Association recommends 2 ft. 9 in. it does so simply for the purpose of having some definite height on which all railroad companies can agree, but it must be remembered that *uniformity of height* is the essential thing and is quite independent of the vote of the Association. If, however, it recommends a certain patented form of draw-bar, the case is quite different. A plaintiff in court would have great difficulty in proving that any form of draw-bar was safer than all others. A resolution of the Car-Builders' Association would supply him with evidence of a very direct and convenient form, which he could use to advantage. If, however, these advantages were well established, the plaintiff would have no difficulty in proving them without such a resolution. It is only in cases where the value of inventions is uncertain and doubtful that the recommendation by associations like the Car-Builders' is of any value as evidence. It may also be added that it is because of such uncertainty and doubt that the inventors value and seek the indorsement of the associations. The equivocal usefulness of such devices is, at the same time, an overwhelming reason for withholding any recommendation.

As we took occasion to point out before, the plain course for such associations to pursue seems to be to recommend when necessary the principles of inventions. If the value of these can be established beyond question, the action of the association would not supply injurious evidence in cases of adverse litigation, because such evidence could be procured elsewhere. If the usefulness of the principles is not clearly established, it is the best of all reasons for not recommending them. If the existence of the railroad technical associations is to be perpetuated, their proceedings must be kept above suspicion. As soon as it is found that they are using their reputations and that of their members to advance private interests, it will inevitably lead to their disruption.

THE MISSOURI, KANSAS & TEXAS.

There were reports recently that the Missouri, Kansas & Texas Railway would be leased to the Chicago, Burlington & Quincy, and as the latter is a strong corporation, with an immense balance of profits over fixed charges even in the worst of years, and moreover has generally been conservatively managed, the reports have been listened to with more attention than is generally paid to such rumors. Ever since it became known last winter that some persons interested in the Chicago, Burlington & Quincy had purchased a considerable interest in Missouri, Kansas & Texas stock and obtained a representation on its board of directors, it has been assumed by certain persons that there would be a connection between the two companies, which, somehow, was interpreted to be particularly favorable to the Missouri, Kansas & Texas, for its securities went up in the market far above their former quotations. Probably some of the effect on the market was due to the fact that the name of Mr. J. M. Forbes, of Boston, appeared as one of those who had taken an interest in the Missouri, Kansas & Texas, and that most men knew Mr. J. M. Forbes as President of the Chicago, Burlington & Quincy Company, and did not know that the J. M. Forbes who had taken a large interest in the Missouri, Kansas & Texas was the son of this gentleman.

The Missouri, Kansas & Texas makes a good connection with the Chicago, Burlington & Quincy (at Hannibal), the two together forming a pretty direct line from Chicago to Northern Texas, and the greater part of a line from Chicago to the Gulf at Galveston, but notwithstanding this the addition of the southern road would introduce the Burlington Company into wholly new fields and considerably complicate its relations to the railroad system. It is now a carrier of Northwest-ern produce—of grain and live stock and their products. Its western boundary is the Missouri, and there it competes with other Western roads for the traffic arriving from the West and South. It is essentially an east-and-west railroad, for though a large part of its business is carried northeastward to Chicago, it goes to Chicago only as one step on the way to its final market in the East or Europe, and is diverted from the direct route only because the route through Chicago is made the cheapest by the water route, or because that cheap water route has made Chicago the best intermediate market, or because the raw material (as hogs) is manufactured there. But the Missouri, Kansas & Texas is rather a north-and-south road than an east-and-west road. The through traffic which it seeks is Southern traffic, in which only live

stock is a great staple similar to Northwestern freight. Moreover, though it is to its advantage to carry everything as far north as possible, to Hannibal, in order to get the longest haul on it, it is so situated that a very considerable portion of its business, and probably the largest portion of some staples, must be carried to and from St. Louis, and if the Chicago, Burlington & Quincy should acquire it, it would have to form relations with St. Louis and with roads east of St. Louis which would not always be easy to reconcile, probably, with its Chicago interests. It would be somewhat in the position of the Chicago & Alton, but without the advantage of an outlet of its own to St. Louis.

Still there is nothing impossible in working two dissimilar systems through one administration, only when one road takes another it is generally with the expectation of securing in that way a considerable traffic that otherwise might be divided among several competitors for it. Now the Wabash stands prepared to compete with the Burlington road at Hannibal for the business the Missouri, Kansas & Texas brings, and it is a matter of indifference to the latter which shall have it. And though the through traffic of the Missouri, Kansas & Texas is strictly southern, its local traffic is nearly all northern, for not only is most of its mileage (540 miles out of 786) in Missouri and Kansas, but all the rest except 5½ miles in Texas is in the Indian Territory, where white men are not permitted to settle, and which consequently hardly affords any traffic. But the relations of the country in which the Kansas lines and most of the Missouri lines lie are closer with St. Louis than with Chicago, and we should suppose that it would not be easy to prevent most of its traffic, or a very large share of it, from going to St. Louis or Kansas City, and on that going to St. Louis the Chicago, Burlington & Quincy would get no haul, and on that going to Kansas City only a chance of a haul.

Still a lease of a road which should contribute no traffic to a company might be acceptable enough if the terms were favorable enough. What terms are offered the Chicago, Burlington & Quincy are not exactly known, but by the new scheme of reorganizing the Missouri, Kansas & Texas, just published, it appears that the annual fixed interest to be paid after this year will be about \$1,100,000, or \$1,400 per mile of road, and there will be besides a little more than \$200,000 interest on the income bonds, which does not become due until earned, but accumulates until paid.

The net earnings available for the payment of fixed charges or for improvements for the past four years have been:

	Total.	Per mile.
1875.....	\$1,243,143	\$1,582
1876.....	1,253,607	1,595
1877.....	1,065,935	1,356
1878.....	598,592	762

With the expenses we have included all charges for "renewals," which have varied from \$190,000 to \$460,000 per year, but not those for "improvements," which have been from \$18,500 to \$250,000. The great decrease in 1878 was due partly to a decrease in gross earnings (\$215,000), partly to an increase in ordinary working expenses (\$224,000), and there was also an increase of \$44,000 in "renewals," which latter in the last two years have been at the rate of \$540 and \$585 per mile, and very likely considerably above the average, the road having but a light equipment—one locomotive to 12 miles of road, one passenger-car to 22½ miles, and 1.44 freight-cars per mile.

Although the gross and net earnings have not increased, there has been a constant, though not rapid, increase in freight traffic. Tonnage mileage and passenger mileage for four years past are given below:

	1875.	1876.	1877.	1878.
Passenger mileage.....	17,820,958	23,937,440	24,520,000	22,581,541
Tonnage mileage.....	82,877,034	105,110,714	108,890,257	118,190,343

But rates have gone down somewhat, there being a lively competition for the Texas traffic and for some of the local traffic of this road.

As for its future prospects, there is but one event which would be likely to make its traffic increase very rapidly, and that is the opening of the Indian Territory to settlement. Its Kansas lines are in the part of the state already well peopled and which, though growing finely, does not grow like a country wholly new, and its Missouri lines are in a district where improvement is not very rapid. But the country on the 240 miles in Indian Territory is now substantially without any of the population which supports a railroad, but, if opened for settlement, would probably in a few years have nearly as dense a population as there is now on its Kansas lines, and afford very likely more traffic per mile of road, because of the smaller number of competing railroads. The settlement of the territory is, however, forbidden by law, and most of those who consider

the obligations which the country has entered into with the Indians of the territory believe that it would be a frightful wrong for it to open the territory to settlement. But the great interest which the adjoining states have in changing this desert into land full of people and production causes a great pressure to be exercised in favor of opening the territory, which is likely to grow greater and greater with the growth of Arkansas, Kansas and Texas; no one but the Indians themselves has any personal or pecuniary interest in keeping the territory for the Indians alone, and doubtless those who oppose the measure most fear that the vigorous, active and continuous efforts of thousands of whites who would profit by the change will some day prevail against the powerless and voiceless Indians and the protests of those who are prompted only by moral considerations.

It is not safe to count upon this step, but it must at least be considered among the possibilities, and it is easy to see what a tremendous effect it would be likely to have on the Missouri, Kansas & Texas Railway. It would be adding the traffic of 240 miles of road, most of which would pass over 190 to 330 miles of its road out of the territory, and with a comparatively small increase of expenses, for the road is there and has to be maintained and worked for the through Texas traffic.

The Texas business of the road is pretty sure to grow constantly, but perhaps not with very great rapidity; and if it does grow much, the rates are pretty sure to fall. It is not only that there is a parallel competitor between Texas and the Northwest, but the Texas traffic is sought from three directions at once—from the south and the east as well as the north. The completion of a rail connection between New Orleans and Houston is likely to strengthen this competition, as will further the completion of the line from Shreveport to Vicksburg (if it is ever effected). But there is a great deal of room for growth in Texas traffic, and this road is likely to get its full share of it. It does not, however, appear to have an exceptionally promising future, except in case of the event which we have mentioned—the occupation of the Indian Territory by white men.

Special Contracts.

There has been no practice in the recent history of American railroads which has done more to bring them under public condemnation and to reduce their profits than the making of time contracts for through freights at less than regular rates. It has been a natural resort in time of railroad wars, as in this way one line could secure from the others a vast amount of traffic by a single contract, instead of bidding against them every day; and in the beginning of such a contest, before war was formally declared, but when one of the parties had decided that it was inevitable, it has been a favorite manoeuvre to go secretly to the heavy shippers and make long contracts below current rates. These have been contracts in which the shipper took no risks. If, when the regular rate was 25, he contracted to send everything for six months at 23, he did not pay 23 if the regular or ordinary rate fell. As soon as the open rate fell below his contract rate, he got the benefit of the open rate, and all the railroad secured by the contract was the continuance of his shipments. He got the advantage of the cut as long as it could be kept secret, and then again if the companies should agree to restore rates before his contract expired. Anything more demoralizing to rates can hardly be imagined. Sometimes the form of the contract has been changed, apparently for the purpose of being able to say that "the company has no time contracts." The agent would agree to carry a million of bushels of grain at a rebate of 10 per cent. for a shipper who averaged 50,000 bushels a day. The shipper would load the cars as fast as they were furnished him; but when complaint was made by other roads, or it had been agreed to restore and maintain rates, half the grain might not yet be carried, and yet the road would have no "time contract." Still it might be carrying for this shipper at 12½ cents per 100 lbs. when others were paying 20 cents, which is good reason for complaint both by the other shippers and the owners of the railroad. Recent action of the "Joint Executive Committee" of Eastern and Western roads will, if carried out by the parties agreeing to it, make an end of this practice. The proposition made in Circular No. 46 of this committee we published recently. It was "to discontinue hereafter the practice of contracting for any special or given lots, blocks or quantities of freight at tariff rates or at less than tariff rates to the seaboard, on home or foreign business, and to give ten days' previous notice of any increase in the tariff." It was submitted to each of the 26 railroads represented on the Joint Executive Committee, and every one voted in favor of it. The names of these companies are given

in the circular elsewhere. They include all the lines to Chicago and all to St. Louis, and most of those carrying to competing points east of these places. They declare that they will none of them be parties to any special contracts made by connecting roads not represented on the committee, but will exact their full proportion of the regular rates. If east-bound freight is not billed at full tariff rates it will be detained at the western termini of the trunk lines until the billing is corrected. It seems that there are still some contracts outstanding made previous to June 12, files of which have been deposited with Mr. Fink, Chairman of the Joint Executive Committee. No drawbacks or rebates will be allowed, except on those contracts, and the vouchers for these must be approved by Mr. Fink before any of the trunk lines will pay them.

With this public adhesion to an agreement which all must recognize as just, it does not seem possible that any of the subscribing roads can violate it; and if they do what they have agreed, the work of maintaining through rates ought to be comparatively easy—that is, keeping them regular, uniform and open: whether they are high or low will depend upon circumstances generally quite beyond the control of the railroads. About two months ago, for instance, they agreed that 15 cents per 100 lbs. from Chicago to New York was as much as they could get. Now they have not cars enough to supply the demand, and they purpose to ask 30 cents before the end of the month. But now in midsummer, with navigation open, it is found possible to get better through rates than were accepted on most of the traffic last winter, when there was no water competition. It is to be hoped, and is reasonably to be expected, that this agreement, and the other measures that have been taken since last winter, will at least prevent such a slaughtering of rates as has prevailed during the past two winters.

Foreign Railroad Notes.

Contracts were made recently in France at \$32 per ton (of 2,204 lbs.) for iron rails weighing 60 lbs. per yard, and \$41 to \$47 for steel rails, according to the place of delivery. A plate-iron bridge of about 26 ft. span was let at 3 cents per pound. Two 24-ton tank-locomotives were contracted at \$7,470 each; 25 locomotives of 28 and 30 tons (not including the wheel-centres) at \$5,870 and \$7,206 each; 25 tenders (also without wheel-centres) at \$7,340 each. Four wooden freight-cars were let at \$500 each, and 10 of iron and wood at \$587. Unfinished Martin-steel car-axes were taken at prices varying from \$3.57 to \$4 per 100 lbs. Iron axles, very nearly \$4 per 100 lbs., but from a different place of delivery.

By a ministerial decision of the Belgian government, a new special rate for carrying coal, coke, etc., for export by seaboard from Belgian ports, when shipped in quantities, 100 tons or more, has been issued. It makes a uniform charge of 0.61 cent per ton per mile, with no terminal charge, except that at least 30 cents per ton of 2,200 lbs. will be collected, however short the distance. This is equivalent to about 29 cents per 100 lbs. from Chicago to New York, and to about 60 cents per ton from Pottsville to Philadelphia. The new tariff went into effect July 1.

Iron rails seem to hold their ground in Belgium much better than here. The Belgian Grand Central, the most important of the private roads, reports that of 7,047 tons used by it in repairs and renewals in 1878, only 675 were steel, while 5,181 were new iron and 1,191 were old iron. New oak ties cost it that year an average about 95 cents a piece. It has just ordered 10,000 iron ties to continue experiments with that material.

Record of New Railroad Construction.

This number of the *Railroad Gazette* contains information of the laying of track on new railroads as follows:

Atchison, Topeka & Santa Fe.—Track is laid on the *Marion & McPherson Branch* from Florence, Kan., north by west to Marion Centre, 10 miles.

Utah Southern Extension.—The first track is laid from Chicken Creek, Utah, south by west 25 miles.

Central Branch, Union Pacific.—Extended from Downs-ville, Kan., westward to Gaylord, 15 miles.

Denver, South Park & Pacific.—Extended from Hamilton, Col., south by west to Red Hills, 20 miles. It is of 3 ft. gauge.

Waxahachie Tap.—The first track is laid from Ennis, Tex., west 5 miles.

Boston, Hoosac Tunnel & Western.—Track laid from the Massachusetts state line northeast to Hoosic Corners, N. Y., 11 miles.

This is a total of 86 miles of new railroad, making 1,273 miles thus far this year, against 947 miles reported for the same period in 1878, 842 in 1877, 1,142 in 1876, 594 in 1875, 913 in 1874, 1,966 in 1873 and 3,372 in 1872.

THE COAL PRODUCTION is one of the best keys to many important industries, and it certainly gives very favorable indications just now. The *Engineering and Mining Journal's* figures for the seven months ending with August, which we copy elsewhere, show not only the immense increase of 63.7 per cent. in the production of anthracite, which is largely due to the exceptionally small production

last year, but is still 26 per cent. greater than in 1877, but also the very satisfactory increases of 12.7 per cent. in the semi-bituminous of Maryland and Central Pennsylvania, of 8.4 per cent. in the bituminous of Pennsylvania, and of 30.7 per cent. in Pennsylvania coke. Bituminous and anthracite coal are to some extent competitors with each other, and it has been claimed sometimes that high prices of anthracite unnaturally increased the consumption and production of bituminous. But now, when anthracite has been most freely produced, we see that it has not prevented a large increase in the production of bituminous, and precisely that bituminous which competes most with anthracite. That is, there has been a large and general increase of consumption.

Taking everything together (the reports including pretty much all the production east of Ohio and north of the Potomac, but nothing in the rest of the country), we have 18,133,680 tons this year, against 12,082,947 tons last year, or fully 50 per cent. increase. Yet, the year 1878, taken as a whole, was one of large iron production.

PETROLEUM TRAFFIC has been heavier this year than in 1877 even, when it was enormously greater than ever before. The exports for the first seven months of this year have been 30 per cent. greater than last year and 4½ per cent. greater than in 1877. The number of gallons exported in the seven months for ten years has been:

Year.	Gallons.	Year.	Gallons.
1870.....	81,263,581	1875.....	131,169,028
1871.....	89,078,092	1876.....	132,540,290
1872.....	80,761,886	1877.....	193,004,308
1873.....	127,636,706	1878.....	155,515,447
1874.....	145,458,306	1879.....	201,955,613

The rapid growth is remarkable, but it must be remembered that petroleum is comparatively a new article of commerce, and has had to discover its markets. It is not at all probable that the foreign consumption has reached its limit yet, or anything like it, and the very low prices prevailing will tend to increase the consumption, though hardly any price reached for many years has made it nearly as dear as any other illuminating material. But it is questionable whether the traffic hereafter, however great it may become, will ever yield large profits to the trunk railroads that carry it to the seaboard. It is a material which could very easily and properly be made to yield a large profit to the carrier so long as its transportation was confined to the railroads; for the highest rate of transportation, added to the cost of production and a good producer's profit, still left it cheap. Usually only a small amount is used by any one consumer, and the production was confined to a comparatively small district, and there was no competition to speak of in other parts of the world. But it begins to appear possible to do without the railroads in carrying from the oil-wells to the refineries or to the seaboard, and if the railroads continue to carry the bulk of the product, they will probably have to accept rates that will leave them a very narrow margin of profit. The completion of the pipe line from the Bradford district to Williamsport, or something else about the same time, made it impossible to maintain rates under the contract with the Standard Oil Company, in accordance with which the business was divided in certain agreed proportions among the several trunk lines. How low the rates are and have been we cannot say exactly; but the difference between the New York price and the Parker City price of crude petroleum is only about 35 cents per barrel (equivalent to 12½ cents per 100 lbs.), and we may be sure that the railroads do not get the whole of this. And with the failure to maintain rates comes a failure to divide the traffic in accordance with the agreement. New York keeps up its proportion as compared with the previous two years very well; but Baltimore, which had 11¼ per cent. of the exports in 1877 and 1878 has but 7½ this year, while Philadelphia has increased from 16 to 19½—gaining what Baltimore has lost. It is true that this agreement did not refer to exports, but there could hardly have been so great a change in the exports without a great change in the receipts also. Evidently the producer is not getting the benefit of the reduction of freights, for crude in the tanks is quoted at 70 cents a barrel, or less, at Parker's, and has seldom been any lower. The cheapness of the material is strikingly shown by the fact that the barrel which holds the oil costs nearly twice as much as the crude oil which fills it. Not much crude oil goes into barrels, however, except for export. Now is the time when, if ever, the economy of petroleum in making steam should be manifested. A ton of crude petroleum at Parker's costs only \$5.60, and at New York \$8.40.

AN ADVANCE IN EAST-BOUND RATES is contemplated, to go into effect Aug. 25, notice being given on the 15th. As we write, the advance has not been fully decided upon, but all who have answered the proposal have favored it, and Western roads generally complain that they cannot supply the demand for cars. The advance proposed is five cents per 100 lbs. on fourth-class and grain, making the rates 35 cents and 30 respectively. Last year, the grain rate was made 30 cents Aug. 19, so that, in spite of the heavier traffic, the roads are slower to reach this rate this year. In 1877, the rate was made 35 cents Sept. 1, but last year that rate was not reached while navigation was open, and was maintained but a very short time afterward. If the present pressure of traffic continues, possibly a 35-cent rate may become practicable again this year. A 30-cent rate, with rail deliveries of five or six millions a week at the seaboard, however, is not an unpleasant prospect to contemplate.

DISCRIMINATION IN NAMES seems to be exercised by the New York, Lake Erie & Western Company certainly. James Fisk, Jr., has disappeared from the waters of the Hudson, the ferry-boat of that name being now the Passaic,

per authority of special act of Congress, but Jay Gould, its colleague, still remains. "One is taken and the other left." From the locomotive James Fisk, Jr., the name has disappeared, but Jay Gould has gone, too, in this case. Further discrimination has been exercised among the locomotives, however. No. 343 is still the Robert H. Berdell, but the names of Wm. M. Tweed, Peter B. Sweeney, George G. Barnard and some others have followed the Fisk and the Gould into retirement. Now the associations connected with these names are not very pleasant, perhaps, but they are matters of history, and might have been left, if only as warnings for the future.

WATER RATES have changed very little within the last week. There has been a slight advance in rail rates, but not until Tuesday of this week, when 4½ to 5 cents a bushel for corn from Chicago to Buffalo was reached; Wednesday 5 to 5½ were the quotations for corn, and wheat is ½ cent higher. Canal rates have remained unchanged for two weeks—6 cents a bushel for wheat, 5½ for corn, and 3½ to 3¾ for oats from Buffalo to New York. Ocean rates have been well maintained at 8½d. per bushel by steam from New York to Liverpool.

JULY EARNINGS have been reported so far for 25 railroads, and only five show a decrease as compared with the earnings of July last year. Of 23 roads reporting for the seven months ending with July, eleven show a decrease. The July earnings are the more favorable because last year there was a general increase, 21 out of 25 roads reporting gains over 1877, and there being an average increase of 9 per cent. in earnings per mile of road.

General Railroad News.

MEETINGS AND ANNOUNCEMENTS.

Meetings.

Meetings will be held as follows:
Indiana, Bloomington & Western, annual meeting, in Indianapolis, Sept. 10.

Railroad Conventions.

The International Road-Masters' Association will hold its annual convention at Niagara Falls, N. Y., Sept. 6.
The Association of Railroad Claim Agents will hold its third annual meeting at the Girard House, Philadelphia, beginning Monday, Sept. 10, at 10 a. m.
The National Association of General Passenger and Ticket Agents will hold its regular semi-annual convention at Louisville, Ky., Sept. 16.
The General Time Convention will hold its regular fall meeting at the Windsor Hotel, New York, Oct. 9.
The Southern Time Convention will hold its fall meeting at Barnum's Hotel, Baltimore, Oct. 15.

Dividends.

Dividends have been declared as follows:
Chicago, Burlington & Quincy, 4 per cent., semi-annual, payable Sept. 15.
Kansas City, Topeka & Western (leased to Atchison, Topeka & Santa Fe), 3 per cent., payable Aug. 25.
Chicago & Alton, 3½ per cent., semi-annual, on the preferred stock, and 3 per cent., semi-annual, on the common stock, payable Sept. 1.

Mail Service Extensions.

Mail service has been ordered over railroad lines as follows:
Omaha & Republican Valley, service extended from Rising City, Neb., to Osceola, 11 miles.

Foreclosure Sales.

The Pennsylvania & Delaware road was sold in Philadelphia, Aug. 12, under a decree of foreclosure granted by the United States Circuit Court, and bought for \$100,000 by Dell Nobbt, of Philadelphia. The road extends from Pomeroy, Pa., to Delaware City, Del., 41½ miles, and had a debt of \$1,083,000 first and \$519,000 second-mortgage bonds. It was formerly worked by the Pennsylvania Railroad Company, but has lately been operated by the Delaware Western under a temporary arrangement.
The Selma & Gulf road is to be sold in Selma, Ala., Sept. 22, under a decree of the Alabama Court of Chancery. The minimum price is fixed at \$80,000, and the purchaser will be required to pay \$50,000 of his bid in cash or Receiver's Certificates, the balance to be payable in bonds and overdue coupons. The sale includes the finished road from the Alabama River opposite Selma to Pineapple, 40 miles, and the franchise, right of way, etc., from Pineapple southward to the Pensacola Railroad near Pollard, Ala., 60 miles. The funded debt is reported at \$640,000.

New York Legislative Investigation of Railroad Practices.

The Committee of the New York Assembly, appointed to investigate charges of discrimination by the railroads, met again in Ogdensburg, Aug. 9, for the purpose of investigating the Ogdensburg & Lake Champlain and the Rome, Watertown & Ogdensburg roads. The session continued two days, during which a good deal of testimony was taken, but the dispatches indicate that no new facts were brought out and that the evidence was chiefly a repetition of things already known.

The Committee, at the close of the Ogdensburg investigation, adjourned to meet in Rochester, Aug. 15. After a session at Rochester, it will meet again in Saratoga, Aug. 20.

ELECTIONS AND APPOINTMENTS.

Annapolis & Baltimore Short Line.—The officers of this new company are as follows: President, George S. Marsh; Vice-President, James I. Waddle; Secretary and Solicitor, John Thomas Mason; Treasurer, Luther Giddings.

Burlington & Lamoille.—Mr. F. G. Brownell has been appointed Master Mechanic, with office in Burlington, Vt.

Chicago, Milwaukee & St. Paul.—The jurisdiction of D. A. Olin, Superintendent of the Racine & Northwestern (late Western Union) Division, is extended over the newly-acquired Davenport & Northwestern road. Mr. John E. Henry is appointed Superintendent of the Davenport line; he has been manager for several years.

Chicago & Northwestern.—Mr. Charles G. Eddy has been appointed Assistant General Freight Agent. Mr. Charles V. McKinlay has been appointed Assistant General Freight

Agent for the Galena and Iowa divisions, to succeed Mr. Eddy.

Colorado Pool Commissioner.—Mr. S. F. Pierson, formerly of the Cleveland, Columbus, Cincinnati & Indianapolis road, has been appointed Commissioner of the Colorado pooled business of the Union Pacific, the Kansas Pacific, and the Atchison, Topeka & Santa Fe. His office will be in Denver.

Lacenoport & Northwestern.—This company, now controlled by the Chicago, Milwaukee & St. Paul, has elected Julius Wadsworth, of New York, President; S. S. Merrill, of Milwaukee, Vice-President.

Detroit & Bay City.—General Freight and Passenger Agent Charles F. Barron having resigned, all communications regarding the passenger and freight business of this road will, until further notice, be addressed to General Superintendent S. R. Callaway, at Detroit, Michigan.

Erie & Western Transportation Co.—The general offices have been removed to No. 234 South Fourth street, Philadelphia, where the following officers may be addressed: Joseph D. Potts, President; Frank J. Firth, Vice-President; John E. Payne, Eastern Manager; James S. Swartz, Treasurer; A. D. Hepburn, Secretary; H. Churchman, Auditor.

Germantown & Chestnut Hill.—This company has been organized with the following officers: President, George B. Roberts; Directors, Josiah Bacon, A. J. Cassatt, G. Morris Dorrance, John P. Green, Strickland Kneass, N. Parker Shortbridge; Secretary, Albert Hawson; Treasurer, William Taylor.

Indianapolis, La Porte & Michigan City.—At the annual meeting in Michigan City, Ind., Aug. 5, the following directors were elected: Wm. Cutting, New York; David Macy, Volney T. Malott, Indianapolis; H. H. Walker, H. H. Roberts, W. G. Peck, A. R. Colburn, Michigan City. The road is leased to the Indianapolis, Peru & Chicago.

Keokuk & Northwestern.—At the annual meeting in Keokuk, Ia., Aug. 1, the following directors were chosen: For one year, C. P. Birge, A. L. Connable, Samuel Klein; for two years, J. H. Anderson, J. F. Daugherty, D. G. Lowry; for three years C. F. Davis, Smith Hamill, Edmund Jaeger. The board elected Smith Hamill, President; Edmund Jaeger, Vice-President and Treasurer; C. P. Birge, Secretary; Smith Hamill, C. F. Davis, J. H. Anderson, Edmund Jaeger, Executive Committee.

Lake Erie & Western.—This company, formed by the consolidation of the Lake Erie & Louisville and its Indiana extensions, has elected the following directors: Hon. Charles Foster, Fortoria, O.; C. S. Brice, Lima, O.; Dan. P. Eells, Cleveland, O.; C. R. Cummings, Chicago; Walston H. Brown, George I. Seney, E. H. R. Lyman, Adrian Iselin, Jr., John F. Martin, New York. The board elected officers as follows: President, C. R. Cummings; Vice-President, Dan. P. Eells; Secretary and Treasurer, B. G. Mitchell, New York; General Manager, Wm. B. Howard; Assistant Secretary and Treasurer, W. H. Andrews; General Superintendent, J. H. Burgoon. The general offices are to remain in Fremont, O.

Louisville & Nashville.—The following circular from Mr. F. de Funiak, Chief Engineer and Superintendent of Machinery, is dated Aug. 1:

"Mr. James Harahan is appointed Road-Master of the Evansville, Henderson & Nashville Division. He will have charge of the Road Department on that division, and will report to Mr. James Geddes, Superintendent.

"Mr. E. M. Humstone is appointed Master Mechanic of same division, and will have entire charge of the Mechanical Department at Edgefield, Henderson and on the line of road, and will be respected and obeyed accordingly. He will report to Mr. James Geddes, Superintendent, except in matters pertaining to construction of new work, for which plans and instructions will be given from this office, same as to all other division master mechanics."

Milwaukee, Lake Shore & Western.—The following circular is dated at Milwaukee, Wis., Aug. 6: "Archibald Rogers, Esq., having been elected Treasurer of this company, all drafts will be made by him, and all drafts on the company will be paid by him at the general office in this city.

"C. F. Rand having been appointed Auditor in place of J. D. McLeod, resigned, communications to his department will be addressed to him at the office in Milwaukee."

Pennsylvania.—The following appointments and transfers have been made: R. E. Pettit, Principal Assistant Engineer of Maintenance of Way, Pennsylvania Railroad Division, in place of George C. McGregor, resigned; James Reed, Assistant Engineer Pittsburgh Division, in place of R. E. Pettit, promoted; Jesse Supples, Assistant Engineer Tyrone Division, in place of James Reed, transferred.

Philadelphia & Atlantic City.—Mr. Robert Gatzmer has been appointed General Passenger Agent, and Mr. George L. Poole, General Freight Agent.

Pittsburgh, New Castle & Lake Erie.—Mr. James Callery has been chosen Vice-President, in place of James S. Negley, resigned. Mr. Joseph Ramsey, Jr., continues in charge of the road as Superintendent until his successor can be appointed.

Rutland.—At the annual meeting in Rutland, Vt., July 31, the following directors were chosen: El. A. Birchard, Jacob Edwards, George W. Gill, James W. Hickok, Edward S. Mosely, John B. Page, B. B. Smalley, Henry M. Whitney, James H. Williams; Clerk of corporation, B. B. Smalley. The board elected John B. Page, President; James H. Williams, Clerk; J. M. Haven, Treasurer; John Froot, Counsel. The road is leased to the Central Vermont.

St. Paul & Sioux City.—Land Commissioner James H. Drake will act as Assistant to the General Manager.

Sandersville & Tenville.—At the annual meeting in Sandersville, Ga., recently, the following directors were chosen: B. D. Evans, J. N. Gilmore, J. B. Jones, A. Matthis, M. Newman, C. R. Pringle, R. L. Warthen.

South Shore Line.—Mr. Henry C. Vilas has been appointed General Manager, with office in Cleveland, O.

West Side & Yonkers.—This company was organized in New York, Aug. 11, by the election of the following directors: Wm. P. Bonn, Robert M. Gallaway, G. P. Lowrey, Oswald Ottendorfer, August Rutten, Thomas R. Sharps, Anthony J. Thomas, H. Willard, C. F. Woerishoffer. The board elected Charles F. Woerishoffer, President; Calvin Stoddard, Secretary; Anthony J. Thomas, Treasurer. Several of the directors are interested in the New York City & Northern Company.

PERSONAL.

—Mr. J. B. Wilson, Division Master Mechanic of the Ohio & Mississippi Railroad, died at his residence in Vincennes, Ind., Aug. 6, of congestion of the brain.

—Mr. Charles F. Barron has resigned his position as Gen-

eral Freight and Passenger Agent of the Detroit & Bay City road. He has held the office about a year, and was previously with the Michigan Central. Mr. Barron is reported to have left Detroit in a sudden and mysterious manner. He has since returned.

—Mr. R. W. Geiger, General Freight Agent of the Jeffersonville, Madison & Indianapolis road, was married at Columbus, O., July 31, to Miss Angie Garvey.

—Mr. Nathaniel Hayes, formerly for many years Superintendent and Master Mechanic of the Alexandria, Loudon & Hampshire (now the Washington & Ohio) road, died at the Providence Hospital in Washington Aug. 1, after a long illness.

—Mr. Thomas Clark, locomotive engineer on the Virginia & Truckee road, has distinguished himself by his refusal to submit to the demands of the local Miners' and Mechanics' Unions. The other engineers on the road joined the Union, but Clark refused, and continues to run his engine in spite of all sorts of threats made against him. On one trip, when the Union had declared that he should not come into Virginia City alive, he was protected by the sheriff and 30 deputies, and the Governor of the State was prepared to call out the militia if necessary.

—Mr. C. J. Hepburn, late Superintendent of the Pittsburgh, Titusville & Buffalo road, was recently presented by the employees of that road with a very handsome diamond stud, costing \$420.

—The Trenton State Gazette, in its report of the Erie tax case before the New Jersey Supreme Court, says: "At this point a gentleman, whose face very strongly suggested the model of Wm. Page's bust of Shakespeare, was called forward by Mr. Parker and sworn as Octave Chanute, the Chief Engineer of the Erie Railway."

—Mr. Wm. Cundell, an old and well-known citizen of Paterson, N. J., died in that city Aug. 10, aged 75 years. For many years he carried on a large business as a sheet iron, tin and copper worker, and about 1859 he built two passenger and several freight cars for the old Hackensack & New York (now the New Jersey & New York) road, which were entirely of iron, and attracted much attention. One of the passenger cars passed, with very slight damage, through an accident that would have reduced a wooden car to splinters.

—Barclay J. Smith, Treasurer of the Philadelphia, Newtontown & New York Company, and President of the Newtontown Banking Company, who was lately arrested for defrauding the bank, has been discharged, the evidence not being sufficient to hold him.

—In our note last week about the return of Mr. George Westinghouse to this community, the types said that he had increased in weight 75 pounds. It may interest his friends to know that there is an error of 50 pounds in this statement, and that the addition to his weight has really been 25 pounds.

—Mr. Wharton Barker, of the Wharton Switch Company, has received a decoration from the Emperor of Russia in recognition of his services in connection with the Philadelphia contracts for purchasing and building Russian war vessels.

—Mr. Wm. H. Vanderbilt has given \$100,000 to the Vanderbilt University, at Nashville, Tenn., which was chiefly endowed by his father. The present gift is for the purpose of building a gymnasium and a school of civil engineering.

—Mr. D. C. Minshall, Master Mechanic of the New York & Oswego Midland road jumped from a hand-car near East Branch, N. Y., Aug. 13, to avoid a collision with a team at a road crossing. The hand-car was running very fast, and Mr. Minshall struck the bank on his head and was dangerously hurt.

TRAFFIC AND EARNINGS.

Coal Movement.

Coal tonnages reported for the seven months ending Aug. 2 are as follows, the tonnage in each case being only that originating on the line to which it is credited:

	1879.	1878.	Inc. or Dec.	P. c.
Anthracite:				
Philadelphia & Reading.....	4,171,643	2,479,751	I. 1,691,892	68.2
No. Central, Shamokin Div., and Summit Branch R. R., Sunbury, Hazleton & Wilkesbarre.....	491,445	393,441	I. 98,004	25.2
Pennsylvania Canal.....	15,980	15,630	I. 350	2.3
Central of N. J., Lehigh Div., and Lehigh Valley.....	2,214,693	1,157,205	I. 1,057,488	91.4
Penn. & New York.....	2,401,018	1,788,500	I. 612,518	34.2
Del., Lackawanna & Western.....	18,815	16,220	I. 2,595	16.0
Del. & Hudson Canal.....	2,060,006	1,125,306	I. 944,210	83.9
Co.	1,862,758	1,132,929	I. 729,829	64.4
Penn. Coal Co.	447,361	447,361	I. 399,393	89.6
State Line & Sullivan.....	29,124	18,679	I. 10,445	55.9
Total anthracite.....	14,302,528	8,737,486	I. 5,565,042	63.7
Semi-bituminous:				
Cumberland, all lines, Huntingdon & Broad Top.....	916,683	844,955	I. 71,728	8.5
East Broad Top.....	80,904	81,574	D. 670	0.8
Tyone & Clearfield.....	58,203	55,463	I. 2,740	7.7
Bellefonte & Snow Shoe.....	870,908	741,300	I. 129,708	17.5
Total semi-bituminous.....	1,935,722	1,717,224	I. 218,498	12.7
Bituminous:				
Allegheny Region, Pa. R. R.	194,656	177,261	I. 17,395	9.8
Penn. and Westmoreland.....	107,337	115,844	D. 8,507	7.3
West Penna. R. R.	434,754	389,151	I. 45,603	11.7
Southwest Penn. R. R.	112,791	107,125	I. 5,666	5.3
Pittsburgh Region, Pa. R. R.	22,069	14,756	I. 7,313	49.4
Total bituminous.....	258,546	238,536	I. 20,010	8.4
Total bituminous.....	1,130,153	1,042,673	I. 87,480	8.4
Coke:				
Allegheny Region, Pa. R. R.	27,515	I. 27,515
Penn. and Westmoreland.....	56,606	39,485	I. 17,121	43.3
West Penna. R. R.	55,181	47,935	I. 7,246	15.1
Southwest Penn. R. R.	532,721	443,191	I. 89,530	20.2
Pittsburgh Region, Pa. R. R.	93,254	54,933	I. 38,321	69.8
Total coke.....	765,277	585,544	I. 179,733	30.7

The anthracite trade has been somewhat disturbed by the conflicting action of the various companies, and buyers are holding off, looking for a fight and lower prices.

The anthracite tonnage of the Belvidere Division, Pennsylvania Railroad, for the seven months ending Aug. 2 was as follows:

	1879.	1878.	Inc. or Dec.	P. c.
Coal Port for shipment.....	6,884	2,947	I. 3,937	133.6
So. Amboy for shipment.....	276,423	286,321	D. 9,898	3.5
Local distribution on N. J. lines.....	184,233	96,541	I. 87,692	90.9
Company's use on N. J. lines.....	52,984	46,467	I. 6,517	14.0
Total.....	520,524	432,276	I. 88,248	20.4

Of the total this year 409,795 tons were from the Lehigh, and 110,729 tons from the Wyoming Region.

Actual tonnage passing over the Huntingdon & Broad Top road for the seven months ending Aug. 2 was as follows:

	1879.	1878.	Inc. or Dec.	P. c.
Broad Top coal.....	80,904	81,574	D. 670	0.8
Cumberland coal.....	107,769	86,900	I. 40,869	61.1
Total.....	188,673	148,474	I. 40,199	27.1

The coal tonnage of the Pennsylvania Railroad for the seven months ending July 31 was as follows:

	1879.	1878.	Inc. or Dec.	P. c.
Anthracite.....	532,645	357,844	I. 174,801	54.4
Semi-bituminous.....	1,116,248	870,367	I. 245,881	28.2
Bituminous.....	654,070	877,426	D. 223,356	34.2
Coke.....	828,640	597,956	I. 230,684	38.6
Total.....	3,451,012	2,703,593	I. 747,419	27.7

The distribution of Cumberland tonnage for the seven months was as follows local consumption accounting for the slight difference in the total from the figures above, which are the total shipments over the Cumberland & Pennsylvania road:

	1879.	1878.	Inc. or Dec.	P. c.
Baltimore & Ohio R. R.	530,498	477,063	I. 53,435	11.2
Ches. & Ohio Canal.....	287,469	305,122	D. 17,653	5.8
Bedford Div., Pa. R. R.	96,899	60,925	I. 35,974	59.1
Total.....	914,866	843,110	I. 71,756	8.5

Actual tonnage of anthracite coal passing over the Pennsylvania & New York road for the eight months of its fiscal year from Dec. 1 to Aug. 2 was: 1879, 554,375; 1878, 463,490; increase, 90,885 tons, or 19.6 per cent.

Railroad Earnings.

Earnings for various periods are reported as follows:

	1879.	1878.	Inc. or Dec.	P. c.
Seven months ending July 31:				
Atchison, Topeka & Santa Fe.....	\$3,228,474	\$1,838,979	I. \$1,389,495	75.6
Bur. & Cedar Rap. & Mo.	761,814	888,538	D. 126,724	14.3
Central Pacific.....	9,231,320	9,367,807	D. 136,487	1.5
Chicago & Alton.....	2,713,326	2,437,308	I. 276,018	11.3
Chi., Mil. & St. Paul.....	4,808,000	4,093,463	D. 714,537	17.5
Chi. & Northwestern.....	8,268,124	8,221,476	I. 46,648	0.6
Chi., St. Paul & Minn.	382,094	404,215	D. 22,121	5.7
Gal., Houston & Henderson.....	244,013	194,391	I. 49,622	25.5
Grand Trunk.....	4,911,722	5,008,975	D. 97,253	1.9
Great Western.....	2,411,444	2,657,550	D. 246,106	9.3
Hannibal & St. Joe.....	947,626	965,774	D. 18,148	1.9
Ill. Central, Ill. lines.....	2,962,017	3,029,319	D. 67,302	2.2
Ill. Central, Iowa lines.....	778,971	506,238	I. 272,733	53.9
Kansas Pacific.....	2,365,235	1,739,159	I. 626,076	36.0
Mo., Kansas & Texas.....	1,501,471	1,475,685	I. 25,786	1.7
Mo. & Ohio.....	950,073	1,031,610	D. 81,537	7.3
St. L., Alt. & T. H.	282,095	259,141	I. 23,554	9.1
St. Louis, Iron Mt. & Southern.....	2,263,963	2,168,378	I. 95,585	4.4
St. L., Kan. City & No.	1,701,369	1,747,775	D. 46,406	2.7
St. Louis & S. E.	649,487	626,015	I. 23,472	3.6
Scioto Valley.....	173,811	145,881	I. 27,930	19.1
Toledo, Peoria & Warsaw.....	678,110	705,016	D. 26,906	3.8
Wabash.....	2,376,742	2,569,425	D. 192,683	7.5
Six months ending June 30:				
At. Miss. & Ohio.....	\$715,486	\$761,810	D. \$46,324	6.1
Net earnings.....	274,524	188,287	I. 86,237	45.8
Bur. & Cedar Rap. & No.	653,824	709,531	D. 55,707	7.6
Net earnings.....	221,262	223,984	D. 2,722	1.2
Bur. & Mo. River in Neb.	802,688	735,081	I. 67,607	9.2
Net earnings.....	528,819	443,827	I. 84,992	19.1
Int. & Gr. Northern.....	684,293	585,108	I. 99,185	17.0
Net earnings.....	152,638	141,518	I. 11,120	7.9
Kansas Pacific.....	1,979,370	1,447,525	I. 531,845	36.7
Net earnings.....	803,141	379,921	I. 423,220	111.6
Mem. Paducah & No.	73,582	100,397	D. 26,815	26.7
Net earnings.....	5,017	21,445	D. 16,428	32.2
St. L., Iron Mt. & So.	1,929,094	1,869,217	I. 59,877	3.2
Net earnings.....	485,424	665,120	D. 179,696	37.6
St. Paul & Sioux City.....	302,133	285,113	I. 17,020	6.0
Net earnings.....	113,012	109,294	I. 3,718	3.4
Sioux City & St. Paul.....	159,738	179,713	D. 19,975	11.1
Net earnings.....	14,739	48,404	D. 33,665	60.6
Southern Minnesota.....	205,328	373,983	D. 168,655	29.1
Net earnings.....	149,008	214,186	D. 65,178	30.4
Five months ending May 31:				
N. Y., Lake Erie & Western.....	\$6,434,673	\$5,872,678	I. \$561,995	9.6
Net earnings.....	1,564,218	1,471,431	I. 92,787	6.3
Month of May:				
N. Y., Lake Erie & Western.....	\$1,350,474	\$1,172,961	I. \$177,513	15.1
Net earnings.....	285,787	253,479	I. 32,308	12.7
Month of June:				
Bur. & Mo. River in Neb.	\$140,736	\$90,590	I. \$50,146	55.3
Galveston, Harrisburg & San Antonio.....	91,482	85,058	I. 6,424	7.5
Month of July:				
Atchison, Topeka & Santa Fe.....	\$456,000	\$329,559	I. \$126,441	38.4
Bur. & Cedar Rap. & No.	107,990	95,007	I. 12,983	13.7
Central Pacific.....	1,442,000	1,533,702	D. 91,702	6.0
Chesapeake & Ohio.....	173,383	140,262	I. 33,121	23.6
Chi., Bur. & Quincy.....	1,036,208	881,463	I. 154,745	17.6
Chicago & Alton.....	329,414	433,473	D. 104,059	31.6
Chi., Mil. & St. Paul.....	773,000	647,400	I. 125,600	19.4
Chicago & Northwestern.....	1,309,984	1,166,270	I. 143,714	12.3
Chi., St. Paul & Minn.	71,150	65,571	I. 5,579	8.5
Gal., Houston & Henderson.....	27,085	24,466	I. 2,619	10.7
Hannibal & St. Joe.....	96,077	133,090	D. 37,013	28.1
Ill. Central, Ill. lines.....	453,139	455,721	D. 2,582	0.6
" " Iowa lines.....	102,945	112,362	D. 9,417	8.3
Kansas Pacific.....	385,865	291,634	I. 94,231	32.3
Logansport, Crawfordsville & S. W.	24,635	16,086	I. 8,549	53.1
Mo. Kansas & Texas.....	258,659	219,926	I. 38,733	17.6
Mobile & Ohio.....	110,074	95,076	I. 15,000	20.9
St. L., Alton & T. H.	37,631	33,866	I. 3,765	11.1
Belleville Line.....
St. L., Iron Mt. & So.	334,800	296,161	I. 38,639	12.9
St. L., Kan. City & No.	192,285	237,829	D. 45,544	19.2
St. Louis & San Francisco.....	126,959	86,929	I. 40,030	46.1
St. Louis & Southwestern.....	121,301	96,211	I. 25,090	26.0
Scioto Valley.....	28,776	28,176	I. 600	2.1
Toledo, Peoria & Warsaw.....	103,843	91,974	I. 11,869	12.9
Union Pacific.....	1,068,050	937,972	I. 130,078	13.9
Wabash.....	417,453	382,031	I. 35,422	9.3
Week ending Aug. 1:				
Great Western.....	\$75,437	\$82,972	D. \$7,535	9.1
Week ending Aug. 2:				
Grand Trunk.....	\$152,423	\$137,817	I. \$14,606	10.6

* Deficit.

Ocean Freight from California.

The San Francisco freight market is not very lively, though

rates are firm and somewhat higher than they have been. There were reported in port Aug. 2 ships of about 42,000 tons capacity disengaged and about 30,000 tons under charter, which is much less than at the same time last year. Wheat is coming forward freely and an active demand for vessels is expected. Rates for wheat charters are 45s. per ton for wooden, and 47s. 6d. for iron vessels to Liverpool or Havre.

New York State Canals.

The receipts of tolls on all the New York state canals in July were as follows: 1879, \$121,048.42; 1878, \$97,270.15; increase, \$23,778.27, or 24.4 per cent. For the season from the opening up to July 31, there was a total decrease of \$98,449.17 in the receipts.

A Nebraska Freight War.

A contest has begun between the Union Pacific and the Burlington & Missouri River in Nebraska, the former company accusing the latter of cutting rates and using inducements to secure business at Kearney and other points, contrary to previous agreements. The immediate result has been a reduction of the rates from Kearney to Omaha to 5 cents per 100 lbs., and a reduction of from \$10 to \$50 per car-load on stock from Kearney and other points. The Union Pacific has also reduced grain rates from points on its Omaha & Republican Valley line to Chicago to 25 cents per 100 lbs. It also threatens to retaliate on the Chicago, Burlington & Quincy, for its alleged backing of the Burlington & Missouri River road, by refusing to exchange business at Council Bluffs except at full tariff rates.

A dispatch from Chicago, Aug. 13, says: "The three Iowa pool lines to-day united in a telegram to the Manager of the Union Pacific Railroad, expressing their disapproval of his course in diverting business from the Chicago, Burlington & Quincy Railroad, and saying that all roads should be treated alike."

Petroleum Exports.

Exports in gallons for the seven months from Jan. 1 to Aug. 2 have been:

Aug. 22 have been :	1879.	1878.	1877.	1876.
New York	142,763,796	110,820,295	137,726,479	73,120,602
Philadelphia.....	39,315,667	24,931,689	24,509,976	35,771,567
Baltimore.....	54,464,474	11,225,029	22,500,334	2,0435,520
Boston.....	3,881,546	1,537,454	2,364,015	1,014,565
Richmond.....	1,408,300		4,082,400	
Portland.....	1,770	1,001	1,390,104	
Norfolk.....			391,100	

delphia's receipts are the largest ever known; Baltimore's smaller than in either of the three preceding weeks. Philadelphia's enormous gain is the most striking feature of the week's business.

RAILROAD LAW.

Stock Damages in North Carolina.

In *Doggett against the Richmond & Danville Co.*, appeal from Guilford Court, the North Carolina Supreme Court thus summed up the rule of liability of railroads for killing stock:

"If the owner permits his cattle to stray off and get upon the track, and they are killed or hurt, the company is not liable unless the company were carelessly running the train, or could, by the exercise of proper care after the animals were discovered, have avoided or prevented the injury. The company is not required to abate the usual and safe speed of their trains lest there may be cattle on the road which may be killed or injured; and if a proper look-out is kept up and all reasonable efforts made, when the obstruction is seen, to avoid an accident, the company is exempt from responsibility and the injury is ascribed to the contributory negligence of the owner of the stock in permitting them to roam about and get on the track. When all the facts and circumstances of the accident are shown, the law itself will raise, or refuse to raise, the inference of neglect upon which the liability of the company depends. The force of the presumption raised by the statute only applies when the facts are unknown, or when from the testimony they are uncertain. In such cases the statute turns the scales, but not when all the facts are established. Negligence is a question of law to be decided by the court upon admitted facts.

Rights of Expressmen.

Expressmen at Taunton, Mass., have been in the habit of shipping over the Old Colony road, but their privileges were withdrawn by the company, Aug. 1. They appealed to the Railroad Commission, but the board announces that the company is in the right. In a case tried in 1874, the Massachusetts Supreme Court held that a railroad corporation is not bound to furnish an expressman, who seeks to carry on his business over its road, with facilities and accommodations different in kind from those furnished to the general public; and the fact that it has furnished him with such facilities for many years, and that he has thereby acquired a valuable business, is immaterial.

Approaches to Depot.

In *Quinby vs. Boston & Maine Company*, the Supreme Court of Maine, in the application of the rule that a railroad company is bound to keep the approaches to its depot, made under its control for the use of those lawfully coming and going, safe and convenient, although within the limits of the highway, held that where a sidewalk was rebuilt by the company on account of the damage which the company had done to the sidewalk, and the walk afterward passed under control of the city and did not constitute a part of the approaches to the depot any more than other sidewalks, the company was not liable for an injury which one passing over the walk to the depot sustained by the steepness of the grade and its slippery condition.—*New York Register*.

Louisiana Railroad Regulation.

The new constitution soon to be submitted to the people of Louisiana contains the following provisions relating to railroad corporations:

Article 10. The General Assembly shall not remit the forfeiture of the charter of any corporation now existing, nor renew, alter or amend the same, nor pass any general or special law for the benefit of such corporation, except upon the condition that such corporation shall thereafter hold its charter subject to the provisions of this constitution.

Art. 11. The exercise of the police power of the state shall never be abridged nor so construed as to permit corporations to conduct their business in such manner as to infringe the equal rights of individuals or the general well being of the state.

Art. 12. No foreign corporation shall do any business in this state without having one or more known places of business and an authorized agent or agents in the state upon whom the process may be served.

Art. 13. No corporation shall engage in any business other than that expressly authorized in its charter or incidental thereto, nor shall it take or hold any real estate for a longer period than ten years, except such as may be necessary and proper for its legitimate business or purpose.

Art. 14. No corporation shall issue stock nor bonds, except for labor done or money or property actually received, and all fictitious issues of stock shall be void, and any corporation issuing such fictitious stock shall forfeit its charter.

Art. 15. The stock shall not be increased except in pursuance of general laws, nor without consent of persons holding the larger amount in value of the stock first obtained at a meeting of stockholders to be held after 30 days' notice given in pursuance of law.

Art. 16. The term corporation, as used in this constitution, shall be construed to include all joint stock companies or associations having any power or privileges not possessed by individuals or partnerships.

Art. 18. The General Assembly shall have power to enact general laws authorizing the parochial or municipal authorities of the state, under certain circumstances, by a vote of the majority of the property taxpayers in numbers and in value, to levy special taxes in aid of public improvements or railway enterprises; provided, that such tax shall not exceed the rate of five mills per annum, nor extend for a longer period than ten years.

Art. 19. Any railroad corporation or association organized for the purpose shall have the right to construct and operate a railroad between any points within this state, and connect at the state line with railroads of other states. Every railroad company shall have the right with its road to intersect, connect with or cross any other railroad, and shall receive and transport each the other's passengers, baggage and cars, loaded or empty, without delay or discrimination.

Art. 20. Railways heretofore constructed, or that may hereafter be constructed in this state, are hereby declared public highways and railroad companies common carriers.

Art. 21. Every railroad or other corporation, organized or doing business in this state under the laws or authority thereof, shall have and maintain a public office or place in this state for the transaction of its business, where transfers of stock shall be made, and where shall be kept for public inspection books in which shall be recorded the amount of capital stock subscribed, the names of owners of stock, the amounts owned by them respectively, the amount of stock paid, and by whom, the transfers of said stock, with the date of transfer, the amount of its assets and liabilities, and the names and place of residences of its officers.

Art. 22. If any railroad company, organized under the laws of this state, shall consolidate, by sale or otherwise, with any railroad company organized under the laws of any other state or of the United States, the same shall not thereby become a foreign corporation, but the courts of this state shall retain jurisdiction in all matters which may arise, as if said consolidation had not taken place. In no case shall any con-

solidation take place except on public notice of at least 60 days to all stockholders, in such manner as may be provided by law.

Art. 23. General laws shall be enacted providing for the creation of private corporations, and shall therein provide for the adequate protection of the public and of the individual stockholder.

Duties of a Trustee.

In the North Carolina Railroad Company and John W. Graham against N. H. D. Wilson, in the North Carolina Supreme Court, the railroad company in executing a mortgage upon its road provided by the mortgage deed for a sinking fund and appointed a trustee, with a provision that if said trustee, or any trustee thereafter appointed, "should die, or resign, or become incapable or unfit to act in the said trust a successor to such trustee shall be appointed" etc. The original trustee having died, the defendant was appointed trustee but becoming insolvent and it appearing that he had invested a portion of the trust funds in a private banking firm in which he was a partner and which had likewise become insolvent, the Board of Directors, having in vain requested said trustee to resign, removed him and appointed the plaintiff Graham. *Held*, It was a breach of trust to invest any portion of the trust fund in the banking house in which the trustee was interested though collaterals may have been taken therefor. It was improper for the trustee to sell bonds of the company which he received uncancelled from his predecessor and apply the proceeds to meet overdue bonds instead of canceling them as he should have done.

That the finance committee of the company examined the defendant's investments and collaterals, and made no objection, was not a sanction by them of the loans the trustee had made to his own firm. Even if it were, the directory being a mere fiduciary agent of the company, their concurrence in a breach of trust would not relieve the trustee, who acts under the deed creating the trust. The exacting of a bond from the trustee is but a subsidiary security for his fidelity, but it is not a substitute for his personal fitness for the place. The bondholders are not necessary parties to proceeding to remove the trustee. While the court does not impute any dishonest purpose to the defendant yet as he has acted in opposition to the well settled rules in reference to trust estates, it is manifestly proper that a receiver be appointed to take charge of the funds of the company during the pendency of the contest over the possession of the office.

Liability for Acts of Employees.

In *Dobbins against the Richmond & Danville Co.*, appeal from Rowan Court, the North Carolina Supreme Court held:

If an employé sustains injury by the act or negligence of another employé, the employer is not responsible, unless the employé who causes the injury is something more than a mere co-employé of the injured man and is a "middleman" or superintendent who issues the employer's orders and represents the employer. Where a train hand is injured by the negligence of one who is superintendent, engineer and conductor of the gravel train on which the injured man was at work, and had power to employ and discharge hands, such superintendent is a middleman and the company is responsible for the injury caused by his negligence.

THE SCRAP HEAP.

Railroad Equipment Notes.

The Taunton (Mass.) Locomotive Works recently delivered 12 engines to the Atchison, Topeka & Santa Fe, and are building 10 more for the Union Pacific.

The Rhode Island Locomotive Works, in Providence, are full of work. Among the orders on hand are some from the Chicago & Western Michigan, the St. Louis, Kansas City & Northern, and the Chicago, Milwaukee & St. Paul. An order from the Detroit, Grand Haven & Milwaukee has just been filled.

The Indianapolis & Vincennes road has received four engines and some passenger cars from the Altoona shops.

The car shops of Osgood Bradley, at Worcester, Mass., have completed a contract for open excursion cars for the New York & Manhattan Beach road.

The paint shop of the works at Cambridge City, Ind., now leased by the Missouri Car & Foundry Co., caught fire one night last week and was burned down, with some unfinished cars. The loss is reported at about \$10,000, and is covered by insurance.

The Cincinnati Southern car contracts have been divided as follows: Passenger and caboose cars to the Barney & Smith Manufacturing Co., Dayton, O.; coal and flat cars to the Wason Car & Foundry Co., Chattanooga, Tenn.; box cars to the Ohio Falls Car Co., Jeffersonville, Ind., and the Mowry Car & Wheel Works, Cincinnati.

The Baldwin Locomotive Works, Philadelphia, got the contract for the new locomotives for the Cincinnati Southern.

The Cobourg Car Works, at Cobourg, Ont., have just completed two passenger cars for the Quebec, Montreal, Ottawa & Occidental road. They are very handsomely fitted and finished, have Miller platforms and vacuum brakes and are mounted on iron trucks with 42-inch wheels and the Master Car-Builders' standard axle.

The Prosser Twin-Cylinder Car Co. has been organized to build cars for carrying grain and similar freight on the Prosser plan. The car consists of two large cylinders of boiler iron about 8½ ft. long and 6½ ft. diameter, each with a hollow steel axle passing through the centre, the ends projecting and having journals which run in suitable bearings carried on a frame, which surrounds the cylinders and has a draw-bar attached at each end. Each cylinder has two steel flanged tires shrunk on to suit the gauge of the track. The company's address is No. 129 La Salle street, Chicago.

The Lake Shore & Michigan Southern shops at Adrian, Mich., recently completed four postal-cars with all the latest improvements. They are 66 ft. long, and the trucks have Master Car-Builders' standard axles.

Bissell & Co., of Pittsburgh, are furnishing a large number of their patent safety car-stoves to the Cleveland & Pittsburgh road.

Iron and Manufacturing Notes.

Some changes have recently been made in the Edgar Thomson Steel Works, which are of interest to the public. Mr. D. A. Stewart, of the Pittsburgh Locomotive Works, has been made Secretary, in place of E. V. McCandless, who resigned. There has also been a readjustment of interests in this important establishment, and one result will probably be that Mr. Gardiner McCandless, who has for several years been acting as Private Secretary of Mr. Andrew Carnegie, at New York, will hardly feel like retaining the position. Mr. Stewart is a capable man, and will no doubt efficiently perform the duties of his office.—*Pittsburgh Telegraph*.

Negotiations are in progress for starting up the rolling mill at Evansville, Ind., which was built in 1873, and has been in operation only a few months since then.

The Elk River Iron Co. has been organized with \$40,000 capital to rent and work the blast furnace at the mouth of Strang's Creek, in Braxton County, West Virginia.

The Indianapolis Rolling Mill last week shipped a lot of iron rails to the Dayton & Southeastern road.

The Eclipse Windmill Co., at Beloit, Wis., last month turned out 145 mills, besides water-tanks, pumps and fixtures. The company is now filling orders from the Chicago, Milwaukee & St. Paul, the Southern Minnesota, the St. Paul, Minneapolis & Manitoba, the Missouri Pacific and other important railroads. The mills are to be introduced on Russian railroads.

The old Portage Iron Works, in Blair County, Pa., have been leased by the Hollidaysburg Iron & Nail Co., and will be run to make muck bar.

Merion Furnace, at East Coshohocken, Pa., has gone into blast. The new Elizabeth Furnace, at the same place, will be blown in soon.

The Beaver Falls (Pa.) Steel Works are putting in a new set of rolls, and building a stone warehouse by the Pittsburgh & Lake Erie track.

Rising Fawn Furnace, in Dade County, Ga., reports all the iron in stock sold, and large orders ahead for more.

Princess Furnace and 6,000 acres of land in Boyd County, Ky., were sold at auction in Catlettsburg, July 28, and bought for \$35,100 by Mr. Thomas Means, of Hanging Rock, Ohio.

The Puget Sound Iron Co. has been organized at Seattle, Wash. Ter., to work the lately discovered iron mines on Port Townsend Bay, which are said to furnish very valuable ore.

The Midvale Steel Works, at Nicetown, Philadelphia, are putting in a 12-ton Siemens-Martin steel furnace of improved design. The large rolling mill is being put in order.

Charlotte Furnace, at Scottsdale, Pa., is preparing to start up. The coke ovens belonging to the furnace are now running, in order to have a supply of fuel ready.

The Helmbacher Forge & Rolling Mill Co., in St. Louis, has plenty of work on hand, and will begin to run double turn as soon as cooler weather sets in.

Bridge Notes.

The Penn Bridge Works, at Beaver Falls, Pa., have taken a contract for a bridge over the Beaver River in that town. It is to be a three-truss bridge with double roadway, having four spans of 155 ft. each, and four short spans of 30 ft. each.

Sealed proposals will be received by the United States Light-House Board at the office of the Light-House Engineer of the Fifth District, in Baltimore, Md., until Sept. 10, for the iron-work of a light-house of the first order at Cape Henry, Va. Drawings, specifications and forms of bid can be had at the office in Baltimore.

The Clinton Bridge Co., of Clinton, Ia., is building an iron highway bridge over the Minnesota River at Shakopee, Minn. It will have two fixed spans and a draw-span over 200 ft. long.

The County Commissioners of Marion County, Ind., recently awarded bridge contracts as follows: Fall Creek bridge, iron, to the Cleveland Bridge & Iron Co., for \$3,720; Pleasant Run bridge, iron, to the same company for \$710; White River bridge, 462 ft. long, of wood, to A. M. Kennedy & Son, of Rushville, Ind., for \$8,190.

The trestle-work on the new George's Creek & Cumberland road in Maryland—about 9,000 lineal feet in all—has been let to R. F. Hawkins & Co., of Springfield, Mass.

Rust & Coolidge, Engineers and Contractors, of No. 142 Dearborn street, Chicago, have recently received contracts for an iron bridge over the Des Moines River on the Sioux City & St. Paul road; an iron bridge, 4 spans of 150 ft. each, over the Kankakee River at Small's Landing, Ill., for the new Chicago & Strawn road; the Solomon River bridge on the Atchison, Colorado & Pacific road, a combination rectangular truss, on a substructure of iron cylinders filled with concrete; a counter-balanced iron swing-bridge over Calumet River on the Chicago & Western Indiana road, and a Howe-truss span on the Owensville Branch of the Evansville & Terre Haute.

The contract for an iron highway bridge over the Passaic River at Columbia, N. J., has been awarded to the King Iron Bridge Co., of Cleveland, O.

Clark, Reeves & Co., at Phoenixville, Pa., are building an iron bridge, two spans, over the Walloomsac River for the Boston, Hoosac Tunnel & Western road; an iron bridge, two spans of 120 ft. each, over the Jacques Cartier River for the Quebec & Lake St. John road, and several small bridges for the Great Western of Canada.

Prices of Rails.

Quotations for steel vary, but the price is generally put at \$44 to \$46 per ton at mill. Some small lots for immediate delivery, however, are reported sold as high as \$48.

For iron rails the demand is as large as ever, and several mills have been obliged to refuse orders. A few sales have been made at \$39 to \$40 per ton at mill and a number of buyers are reported on the market. Some sales of foreign rails to arrive have been made at \$40 per ton at the seaboard.

Old iron rails are still scarce and high, and prices are quoted at \$24.50 to \$25.50 per ton in Philadelphia. Prices are too high, however, for profitable use of this kind of material, and some consumers have gone back to pig-iron and started their puddling furnaces.

Filings.

An exchange describes a new freight engine as having three drivers, each 15 ft. 6 in. in diameter. A locomotive perched up on three drivers must look funny, but when those drivers are 15½ ft. diameter, we must conclude that three of them are quite enough.

A brakeman on an Erie coal train the other day hung up his vest in the caboose and a sudden gust of wind took it out through the door. Soon he discovered his loss, and as the vest had \$90 in a pocket, he jumped off and started back to look for it. After tramping nine miles he found it in possession of a trackman, to his great relief. The remarkable point was not the honesty of the trackman—trackmen generally are honest—but that a brakeman should have saved only \$90 out of his princely pay. Perhaps he had invested in real estate or 4 per cent. bonds lately.

A widow, whose husband was killed in a railroad accident, sues the company and recovers \$5,000 damages. A man who lost his leg in the same accident, sues in the same court and gets \$15,000. The widow waylays the judge and charges him with unjust discrimination in valuing a leg at three times as much as a whole man. "That is not the point, my dear madam," says the urbane judge, "Even with \$15,000 the man cannot buy a leg as good as the one he lost. But a woman as young as you are, and with \$5,000, can have no difficulty in getting a new husband." The widow retires satisfied.

A narrow-gauge road near Pittsburgh has been trying to get up a broad-gauge railroad war, and really it was quite a success. For a week the whole neighborhood was agitated by injunctions, forcible seizure of trains, wholesale discharge and re-instatement of employes and all the rest of it. But no blood was shed, and the war finally closed by the graceful retirement of all the contestants, a generous distribution of "taffy" by the board of directors, and general wonder as to what all the row was about.

A Query—Iron Cars.

Can any one formerly connected with the old Hackensack & New York or the Erie road, tell what became of the iron cars built for the Hackensack road when it was first opened, why they were given up, and how long they remained in use? They attracted much attention at the time they were built, which was in 1858 or 1859.

A Logging Railroad.

The Northwestern Lumberman says: "The logging railroad of Mr. Thos. Nester, in Michigan, is quite an enterprise, and is worthy of note. About 18 miles southwest of Ogemaw station, on the Mackinaw Division of the Michigan Central Railroad, lies Thomas Lake, and at some distance beyond another small lake, both being situated in Roscommon County. From the latter lake, Nester's main railroad track runs southeasterly to the banking ground, 9 miles distant, on Sugar Creek. A branch three-quarters of a mile in length connects Thomas Lake with the main line. About midway on the main line another spur branches off in a westerly direction to a third small lake some three miles away.

The general features of construction were similar to that of ordinary railroad work, cuttings and embankments being made, bridges and culverts built, and swamps traversed, the whole affair being of quite a substantial character. The main line is ironed with 35 and 40 lb. rails, and the branches with 25-lb. There are two locomotives now in use, and a third and larger one will soon be added. The weight of the heavier now running is 20 tons. Twelve trains of 16 cars each, run each way daily on the main line. The cars carry from 12 to 14 logs each, running 4 to 6 to the thousand feet. The logs are loaded from the first two lakes spoken of by two parallel Ewart's detachable drive chains (No. 107), the raise being about 15 feet. The chain is provided with an adjustable folding knee and roller trucks, patented by J. G. Emery. The chains were furnished by Emery & Garland of Saginaw city. The logs are hauled to the dumping ground on Sugar Creek, where the track runs over the water for a quarter of a mile on a substantial trestle, at the side of which is a dock ten feet wide and extending the length of the train, from which runs a series of skids, carrying the logs to an artificial pond. This pond was built especially for this purpose, is made by sheet-piling the entire distance, of sawed timber driven tight together, the joints caulked with oakum, and will hold three or four days' run of logs.

The three-mile branch road was the most difficult part of the work, there being much trestle work, and heavy banks. There are cuts 31 ft. deep and several fillings of from 12 to 20 ft. At the lake a trestle will be constructed 300 ft. long and 42 ft. above the water.

At Thomas Lake a complete mill is established, with blacksmith and railroad shops, where all the timber for the railroad is cut, and the cars built, and all the necessary work done for the railroad. The branch running to Thomas Lake is to be extended three miles to another lake, and finally to Houghton, some 10 or 12 miles distant. This line will be known as the Houghton Lake & Tittabawassee Railroad.

The enterprise was begun in the opening of 1878, and the engines were taken over the rough road from Ogemaw station. It is estimated that some 1,000,000,000 feet of pine lie tributary to those lines, of which Mr. Nester has some 10,000 acres and Thomas Nester & Co., 12,000 acres more. The investment in the enterprise is said to exceed \$100,000.

A Long Train of Empties.

One day last week Engine No. 1 on the Indianapolis & Vincennes road took out just 100 empty box cars, bound down the road to be loaded with wheat. This is said to be the longest train ever taken out of Indianapolis by one engine.

Equipment Contracts for the Cincinnati Southern.

The Cincinnati Railroad Company, lessee of the Cincinnati Southern road, last week let the contracts for the new equipment which will be needed to work the road when completed through to Chattanooga. The awards made are as follows:

Baldwin Locomotive Works, Philadelphia, 15 locomotives at \$7,200 each. They are, we believe, to be 16 by 24 in. cylinders.

Barney & Smith Manufacturing Co., Dayton, O., 10 first-class passenger-cars at \$4,100 each; 5 baggage-cars at \$2,200 each; 6 eight-wheel caboose-cars at \$825 each; 12 four-wheel caboose-cars at \$500 each.

Ohio Falls Car Co., Jeffersonville, Ind., 225 box-cars at \$425 each; 50 stock-cars at \$415 each.

Mowry Car & Wheel Works, Cincinnati, 150 box-cars at \$438 each.

Wason Car & Foundry Co., Chattanooga, Tenn., 100 coal-cars at \$367 each; 125 flat-cars at \$347 each.

All the above to be delivered on the track of the road either at Cincinnati, Walton, Danville Junction or Chattanooga, not later than Dec. 1 next; a deduction to be made at the rate of 8 per cent. per annum from contract price for each day's delay after said date.

Car Coupling in England.

Car coupling in England does not seem to be much safer than on this side of the water, judging from the following extract from *Punch*:

"Just in time—Constant Traveler: 'Hullo, Johnson! You here? Have you left the Great Mudley goods yard?'"

"Retired Shunter: 'Yes, Sir; there were ten of us when I joined there eight years ago; so, as the others were all smashed, I thought it was about time for me to leave.'"

She Showed Her Ticket.

The gates at the passenger depots which shut out all people not having tickets for the trains were yesterday closed at the Union depot against an elderly woman wearing spectacles and using an umbrella for a cane.

"Can't pass without a ticket," said the man at the gate as she came up.

"I want to see if there's anybody on that train going to Port Huron," she answered.

"Can't pass without a ticket, madam."

"I've got a daughter in Port Huron, I have."

"Can't help it, please. My orders are very strict."

"I tell you I want to send word to my darter!" she exclaimed, adjusting her spectacles for a better view of the official.

"Yes, but we can't help that, you see. Please show your ticket."

"I want this 'ere railroad to understand that I've got a darter in Port Huron, and she's got a baby four weeks old, and I'm going to send her up word in spite of all the gates in this depot!"

"Please show your ticket, madam."

"I tell you once more—"

"Please show your ticket, madam."

She gave the old umbrella a whirl and brought it down on his head with all the vim of an old-fashioned log-raising, and as he staggered aside, she passed him and said:

"There's my ticket, sir, and I've got more behind it! Mebbe a man and gate can stop me from sending word to my darter to grease the baby's nose with mutton taller if the weather changes cold, but I don't believe it!"

And she walked down to the train, found some one going to Port Huron, and came back carefully humming the melody of the "Three Blind Mice."—*Detroit Free Press.*

Railroad Branch, Young Men's Christian Association.

This organization has opened a free reading room for railroad men at No. 634 South Canal street, Chicago, which was formally opened and dedicated on the evening of July 5. There is a large reading room, well supplied with newspapers, etc., and so arranged that it can be used for meetings. Attached to this are several small rooms for conversation, etc., and also a barber's shop, dressing-room, bath-room and other conveniences. Several companies have contributed to the cost and the furniture has been paid for by General Manager Huggitt, of the Chicago & Northwestern. The institution is one that may be peculiarly useful to railroad men, and will doubtless be appreciated by them, for no class of men can say with so much truth that they have "no continuing city" in this world and no class is more in need of a resort of this kind.

The Williams Headlight Patent.

On Aug. 11, Judge Wallace, of the United States Court at Syracuse, N. Y., filed his decision in the locomotive headlight case of Irvin A. Williams, of Utica, N. Y., vs. the Boston & Albany Railroad Company, for infringement on the patent for a coal-oil burner. This suit was defended by the Eastern Railroad Association. The decision also allows an accounting for damages to Mr. Williams. A large sum is involved, as a number of roads have been using the burner.

OLD AND NEW ROADS.

Alabama Great Southern.—The work of ballasting this road is now in progress. Major F. L. Wadsworth, Assistant Superintendent, who is in charge of this work, first prepares his track by taking out the dirt between the ties, and then runs his train of ballast slowly over the road, and the men shovel the ballast off at the ends and through two holes in the car prepared for that purpose. This saves the waste of ballast in putting it off at the sides and the trouble of shoveling it on the road-bed. He saves time by having a gang of men at the gravel pit for loading and letting the section gang who are ballasting the track do the unloading.

Algiers & Timbuctoo.—The New York Times says: "The French Government has appointed a commission to consider and report upon the feasibility of building a railroad across the Desert of Sahara from Algeria to the Sudan and Senegal, and the Budget Committee and the Committee on Algerian Railroads have both passed resolutions in favor of having the work begun, if by surveys its practicability can be demonstrated. The commission, which is quite a large one, includes M. De Lesseps, who will in this have to lay aside his plan for flooding the great desert by connecting it by a supply canal with the Mediterranean Sea. Surveys already made demonstrate the fact that the immense sandstorms which were said to prevail there, and which were depicted in school-books as overwhelming whole caravans of travelers, have no existence. No doubt, in the absence of moisture, dust is blown about by the wind much more than it would be in a country visited by frequent rains; but the soil of the Sahara is in no way different from that of Europe, except that it is drier, and hence it could hardly be carried, as sand might, by the wind, in sufficient quantities to instantly bury people. A blockade of sand several feet in height and extending over miles of territory would be a much more serious obstacle for a railroad train to encounter than a snow blockade, and it is, therefore, fortunate that the old accounts of the desert have proved to be fictitious. M. de Freycinet, who has made something of a study of this subject, claims that the Sudan has a population of 100,000,000, which is certainly a very generous estimate, and that the people are peaceful and industrious. These opinions are not wholly in accord with what visitors to the Court of his Majesty the King of Timbuctoo have told us; but then, travelers' tales are proverbially untrustworthy, and these may turn out to be no more deserving of credence than the stories about the moving sands. The cost of the proposed undertaking is roughly estimated at \$75,000,000, and this makes it unquestionably a more promising speculation than a Panama Canal, which will cost twice that amount."

The last assertion may be doubted; there is already an established traffic over the Isthmus of Panama and a still greater traffic which could take that route; but the business of the Sudan is an utterly unknown quantity.

Atchison, Topeka & Santa Fe.—The Marion & McPherson Branch is completed from Florence, Kan., north by way to Marion Centre, 10 miles. Its completion and formal opening were celebrated by a barbecue at Marion Centre, Aug. 12.

Baltimore & Hanover.—For some time past the work on this road has been going forward steadily. Tracklaying is in progress, and the company hopes to have cars running through to the Western Maryland at Emory Grove before the end of September.

Baltimore & Ohio.—The Baltimore Gazette of Aug. 11 says: "The readers of the Gazette will doubtless remember some of the plans proposed from time to time to obviate the delay in covering the small connecting link between Camden Station on the south side and the tracks of Mr. Hinkley's road on the east side of the city. One of these—and not the least important—was by a proposed branch road, which should skirt the city and join the Philadelphia, Wilmington & Baltimore road on the northeast. Other schemes came up in turn, but were abandoned, until the idea of accomplishing the object by a water route was taken up and is now about to be carried into effect."

"During the Centennial some of the passengers were conveyed, without coming into the city, to Locust Point direct, where the cars were ferried across on barges to the foot of Chesapeake street and attached to the Philadelphia, Wilmington & Baltimore trains on Boston street, thus saving 25 to 40 minutes by the transfer. This portion of the traffic was the fruit of what was known as the 'lightning express' train between Baltimore and Washington, and doubtless the success attending the experiment culminated in the proposed adoption of this mode of transfer. At any rate, the Baltimore & Ohio Company has not only been discussing the subject recently but the project assumed tangible shape Saturday when the contract for a large and powerful steam ferry barge was awarded to the Harlan & Hollingsworth Company, of Wilmington, Del., at a figure approaching \$100,000, and under the contract the vessel is to be finished in 180 working days from date. A brief description of the boat and its appointments is as follows: Length, 310 ft.; beam, 36 ft. 8 in.; height of deck above the water when loaded, 10 ft.; draft of water, when loaded (without ballast), 5 ft. In order to conform to the various tides the simple expedient of water ballast has been adopted. Four separate tanks with bulkhead partitions will be made, in the bottom of each of which there will be a valve for the introduction of water, and a pump connection with each compartment, leading to a donkey engine on deck, will be supplied in order to discharge the ballast. The compart-

ments being separate, the ease with which the vessel can be raised or lowered is apparent; or either end can be adjusted to suit the ferry slips and draw-bridges without affecting the other. The ballast can also be injected or discharged while the boat is moving, thus saving frequent delay. The hull will be of iron with a view of overcoming any ice obstruction in the harbor during the winter season. Double compound engines will be supplied, having 34-in. cylinders and 9-ft. stroke and will work independent when disconnected, so that an abrupt turn can be made by working one paddle-wheel backward and the other forward after the manner of the new iceboat F. C. Latrobe. The wheels will be 22 ft. in diameter. The deck will be fitted up with five separate tracks, having a capacity for a freight train of 27 cars, or of nine passenger coaches, while no matter how small the load, the boat can be perfectly ballasted, owing to the arrangement of the tracks. If a locomotive accompanies the train it will, even when the maximum number of cars is taken on the boat, only make a difference of one car. In making up the specifications the originators considered the particular features of speed, strength and durability alone, so that the boat will not be adaptable for free summer excursions. A trip across the harbor, including terminal delays, will be made in five minutes, the objective points to be the Baltimore & Ohio property at Locust Point, and the Philadelphia, Wilmington & Baltimore property at Canton. Between elevator B, of the Baltimore & Ohio Company, and the new European piers on the east, an extensive draw-bridge, with all the modern appliances and a commodious slip, will be built. Just across the harbor, on the property of the Philadelphia, Wilmington & Baltimore Railroad, where the present Canton pier of the company is located, another new slip and draw-bridge will be constructed.

"This is how the Baltimore & Ohio Company proposes to overcome the delays attending street transfers, and, once inaugurated, the foot of the horn of the tandem driver will be heard no more from the passenger-car platforms along Pratt street, and truck-drivers will no longer be in danger of collision with the trotting teams. The Pratt-street tracks will not be immediately removed, but will be retained for local purposes, but the contemplated change will greatly relieve that overcrowded thoroughfare and may eventuate in the removal of the tracks altogether. The many benefits accruing from the proposed reform will appear in time, but to the Baltimore & Ohio Railroad Company and its patrons the immediate effects are obvious in the economy of time and greater convenience to both."

Boston, Hoosac Tunnel & Western.—On the eastern end of this road track has been laid from the Massachusetts state line through Vermont to Hoosac Corners, N. Y., 11 miles, and the work from that point to Eagle Bridge, 5½ miles, will be all ready for the track as soon as the bridge over the Walloomsac River is finished. At Hoosac Corners is a grade crossing over the Troy & Boston track, the question of allowing which is now under consideration by the commission appointed by the New York Supreme Court. On the finished section between Eagle Bridge and Mechanicsville, N. Y., two trestles have been filled up, some culverts put in, and other permanent improvements made. The work can be finished in a few weeks if the legal obstacles to the Troy & Boston crossing can be removed.

Canadian Pacific.—Ottawa dispatches state that the contract for 100 miles of new road in Manitoba has been awarded to Mr. Hall, of Trois Rivières, P. Q., the lowest bidder, at \$553,000. Mr. Hall, however, failed to deposit the required security, and another award will be made. It is said that \$630,000 was the next lowest bid.

Bids will be received by F. Braun, Secretary of the Department of Railways and Canals at Ottawa, Canada, until Aug. 20 for 35 tons of fish-plate bolts and nuts, and 700 tons of railroad spikes.

Central Branch, Union Pacific.—On the extension of this road westward the track is now laid to Gaylord, in Smith County, Kan., 15 miles beyond the late terminus at Downsview and 224 miles from Atchison. On the branch running west by south from Downsview tracklaying has been begun.

Chateaugay.—This company, whose road is to run from Dannemora, N. Y., to the Chateaugay iron bed, now proposes to extend it through Malone to the St. Lawrence. Parties in the interest of the company are looking for aid along the proposed line.

Chicago, Burlington & Quincy.—Grading is well advanced on the extension of the Albia, Knoxville & Des Moines Branch from Knoxville, Ia., to Des Moines, and track-laying was begun last week at Knoxville.

Chicago, Rock Island & Pacific.—It is again reported that this company desires to secure a connection of its own with Kansas City, and that it will build a line from Edgerton Junction, Mo., to the Kansas City bridge. The distance is about 30 miles.

Chicago & Western Indiana.—This company was recently organized to build a line from Dolton, Ill., northward to Chicago, 21 miles, to be used as a part of the main line of the Chicago & Eastern Illinois. That road now uses the Pittsburgh, Cincinnati & St. Louis track from Dolton to Chicago. Work has been begun on the new road.

Columbus & Northwestern.—Some grading is in progress on this road. Its officers are now at work securing the right of way, and in most cases it is given or pay taken in stock. It has been decided to make the gauge 3 ft. 6 in., in order to be better able to take standard-gauge freight cars on the trucks, if required.

The company has decided to change its name to Columbus, Urbana & Ft. Wayne.

Davenport & Northwestern.—It is reported that the Chicago, Milwaukee & St. Paul Company pays for this road \$1,750,000 in 5 per cents, and is to take it clear of all indebtedness. The existing bonded debt is \$1,710,000 and the floating debt about \$200,000, besides \$3,520,000 capital stock. If the price stated is correct the road, in order to say the purchaser, will have to earn net \$87,500, or \$544 per mile. Its net earnings for the year ending June 30, 1878, the last reported, were \$110 per mile.

The Davenport (Ia.) Gazette states that the road is to be attached to the Racine & Northwestern Division (late Western Union) of the Chicago, Milwaukee & St. Paul, and will be known as the Davenport Line of that division. The connection is at Oxford, Iowa.

Denver, South Park & Pacific.—The track is reported laid from Hamilton, Col., the late terminus, across the South Park to Red Hill, 20 miles. This place is 110 miles from Denver, and from it there are only 23 miles of staging to Leadville by the road to Mosquito Pass. By the railroad, however, the distance is much greater, as it follows the Trout Creek line, the Mosquito Pass being impracticable.

East Broad Top.—Surveys are being made for a branch from Orbisonia, Pa., to Ft. Littleton, about 14 miles. It is in the centre of the Broad Top coal region.

Galesburg Branch.—The town of Galesburg, Wis., has voted \$18,000 in aid of a line from that place to Trempe-

jeau on the Chicago & Northwestern. The distance is about seven miles.

Germantown & Chestnut Hill.—The books of subscription to the stock of this company were opened in Philadelphia last week. The whole amount—\$500,000—was taken at once, and the company has been fully organized. This is the company which is to build the new branch of the Pennsylvania Railroad to Germantown, and a majority of the stock was taken by that company.

Grand Trunk and the Great Western.—A London dispatch of Aug. 7 says: "The proposal of President Childers on behalf of the Great Western Company, of Canada, to the Grand Trunk Company, is that all the competitive traffic shall be pooled in percentages at a rate to be hereafter agreed upon between the two companies, any question which may arise in respect to the agreement to be settled by arbitration; the arrangement to remain in force for 20 years."

In reply President Tyler, of the Grand Trunk, points out that the plan proposed would cause endless discussion as to what was and what was not competitive traffic. President Tyler makes a counter-proposal that the whole of the net receipts of the two companies be pooled and divided in fixed proportions.

Grayville & Mattoon.—In the foreclosure suit against this road, on the intervening petition of the Southern Rolling Stock Company, the United States Circuit Court has ordered that testimony be closed by Oct. 6, and the case set for hearing before the Master on Oct. 15.

Guatemala Central.—The San Francisco *Evening Post* says: "About a year ago a number of capitalists in this city organized the Guatemala Central, in order that the resources of that country might be more fully developed, and the interior brought in communication with the outside world. Emio Nanne, an experienced engineer, was placed in charge of the work. The first section of the road, 28 miles in length, is already completed from San Jose de Guatemala to Escuintla, the centre of the coffee-growing district, and ready for the rails, which are now on the way from England. Mr. Nanne, who is at present in this city, says that engineers are now engaged in surveying the route from Escuintla to the city of Guatemala, a distance of 35 miles; and this will be pushed to completion, although the difficulties of the country are such that two years may elapse before the shriek of the locomotive is heard in the streets of the city. The cost of the latter extension is estimated at \$2,500,000. Locomotives and rolling stock will be purchased in New York during the present week, and shipped at once for San Jose. Mr. Nanne will purchase a quantity of railroad supplies in this city, and expects to return to Guatemala by the Granada on the 20th inst."

Hannibal & St. Joseph.—In the matter of the petition of this company for an injunction to restrain the St. Louis, Kansas City & Northern Railway Company from constructing their tracks on the right of way of the plaintiff from Randolph Bluff to Kansas City, a distance of nine miles, the Clay County (Mo.) Circuit Court has rendered a decision refusing to grant the injunction, upon the grounds that each company had an equal right to construct their railway over said right of way under the franchise granted by the Legislature of 1867. Immediately after this decision, an injunction was asked for by the St. Louis, Kansas City & Northern Railway to prevent the Hannibal & St. Joseph Railroad from carrying out an order refusing the plaintiff the use of their road from Menneville to Kansas City after Aug. 18, 1879. After brief argument, the Court postponed further action until the next regular term, which will begin Aug. 25.

Illinois Central.—An order authorizing this company to carry its Kankakee & Southwestern Branch at grade across the Toledo, Peoria & Warsaw track in Chatsworth, Ill., has been granted by the United States Circuit Court, the Illinois Central to pay all expenses connected with the crossing.

During the month of July the traffic of the lines operated by this company was:

	1879.	1878.	Decrease.	P. c.
In Illinois.....	\$453,159.00	\$455,728.55	\$2,569.55	0.6
In Iowa (leased lines)...	102,945.00	112,302.18	9,357.18	8.3
Total.....	\$556,104.00	\$568,030.73	\$11,926.73	2.1

During July, 1879, the land sales were 1,085.23 acres for \$6,161.23, and the cash collected on land contracts was \$8,487.19.

Indiana, Bloomington & Western.—Notice is given to holders of bonds of the Indianapolis, Bloomington & Western, Main Line, who deposited their bonds with the Committee and joined in the purchase of the road, that the securities of the new company are now ready for delivery to holders of the Central Trust Company's certificates. The certificates can be sent to any members of the Purchasing Committee in New York. Their addresses are: Austin Corbin, 115 Broadway; G. E. Taintor, 20 Broad street; Josiah B. Blossom, 76 Wall street.

Intercolonial.—The formal transfer of the Riviere du Loup Division of the Grand Trunk to this road was completed Aug. 12, and the road was to have been worked by the Intercolonial officers and employees on the following day. All trains, however, were stopped at Point Levis by a mob of some 150 men, the former employees of the division, who claimed that they had been promised a continuance in their places, instead of which they had been discharged and men from other divisions set at work. The local authorities were unable to put down the mob, but the trouble will certainly not last more than a day or two, as police and militia will be brought from other places.

Kansas City & Northwestern.—This company has been organized to build a railroad from Kansas City Northward into Clinton County, Mo. It will be about 36 miles long.

Lake Erie & Western.—This company has been formed by the consolidation of the Lake Erie & Louisville Company, of Ohio, and the Indianapolis & Sandusky Company, of Indiana. The consolidated company owns a completed line from Fremont, O., to Celina, 100 miles, with a branch from St. Mary's, O., to Minster, 10 miles, and extensions are to be built to Muncie, Ind., to connect with the La Fayette, Bloomington & Muncie road, and across Indiana to North Vernon, on the Ohio & Mississippi.

Lake Shore & Michigan Southern.—Many reports are again current of a lease of this road to the New York Central & Hudson River Company, with a guarantee of dividends. They are circulated chiefly for effect in stock transactions.

Lincoln & Northwestern.—Mr. John Fitzgerald, of Lincoln, Neb., has the contract for the entire grading of this road, the extension of the Atchison & Nebraska. The line is 73 miles long, extending from Lincoln west to Milford on the Blue River, thence north and northwest through Seward and David City to Columbus.

Logansport, Crawfordville & Southwestern.—The

order of sale of this road directs that "no bid for less than \$250,000 be received, and that no one be allowed to bid unless he shall have first deposited \$70,000 with the Master. This sum of \$250,000 has been fixed by the Court because the claims allowed as prior to the first mortgage reached that amount. "An appeal from the order directing the payment of those claims has been allowed to the first-mortgage bondholders, represented by Charles W. Hassler; it is stated that while the road will probably be sold on the day fixed, yet the case will be carried to the United States Supreme Court, on the ground that, as the debts were incurred by a receiver appointed under foreclosure of a second mortgage, and without the knowledge or consent of the first-mortgage bondholders, they cannot be placed by the Court prior to the first mortgage, executed several years previously."

Long Island.—Notice is given that all annual and quarterly card passes will be void after Aug. 15. All such passes are to be handed in, and in place of them coupon passes will be issued, from which conductors will take up one coupon for each trip.

A recent order calls attention to the rule prohibiting persons from riding on locomotives, unless properly engaged thereon; also to the necessity of putting cars provided with vacuum brakes together and next to the engine in making up passenger and excursion trains.

Michigan Air Line.—The long litigation over this little road has been revived by a new bill filed in the United States Circuit Court in Detroit by Rufus Osborn, a stockholder of the original company. The bill sets forth the history of the road and asks that the decree of foreclosure and sale, and consequently the sale itself, be set aside as fraudulent and void; that an accounting be had with Young & Co., the contractors, and also on the mortgage, and an opportunity for redemption given; that the mortgage be canceled as fraudulent and void; that the property be delivered up and account rendered of the earnings while the trustees were in possession.

The road is completed from Ridgeway, Mich., to Romeo, 15 miles.

Michigan Central.—Notice is given that the second-mortgage bonds of the leased Grand River Valley road, which will mature Sept. 1, will be paid on behalf of this company, at par and accrued interest, by Chase & Atkins, No. 18 Broad street, New York. The amount of these bonds, which are guaranteed by the Michigan Central, is \$500,000.

Missouri, Kansas & Texas.—A plan of reconstruction has been agreed upon by the committee consisting of Messrs. Robert C. Martin, Moses Williams, Jr., and James J. Higginson, concerning which the New York *American Exchange* says:

"The plan of reconstruction prepared by the committee above mentioned contemplates no change in the amount of the bonded debt or stock. The rate of interest is to be reduced, but no scaling of the principal of the debt is proposed, nor will any assessments upon either bonds or stocks be required. It is proposed to organize the successor company under the title of the Kansas, Missouri & Texas Railway Company. If a foreclosure of the first consolidated mortgage is necessary it will be carried out, but, if possible, the reorganization of the property will be made by the consent of all parties in interest. It is said that the prospects for the success of the plan are favorable, but the consent of a large interest represented by a syndicate of Dutch bankers will have to be obtained. One of the members of the reorganization committee is now in Europe."

"It is proposed to issue \$14,752,000 consolidated mortgage bonds of the new company, to bear interest at the rate of 4 per cent. per annum from Feb. 1, 1880, up to Feb. 1, 1881, and at the rate of 5 per cent. thereafter to 1930. These bonds are to be exchanged at par for the present 7 per cent. consolidated mortgage bonds. There are also to be issued \$2,729,120 new bonds, bearing 4 per cent. interest per annum, to be exchanged for the overdue interest upon the present consolidated bonds, amounting to 17½ per cent., and the 1 per cent. interest surrendered for the first year upon the new securities. Should there be any default in interest upon the new bonds, 60 days after such default it is provided that the rate of interest shall be restored from 5 per cent. to 7 per cent."

"It is also proposed to issue \$7,200,000 income bonds of the reorganized company, bearing interest at the rate of 3 per cent. per annum, if earned, and cumulative if not paid. These will be exchanged at par for the present income bonds. For the coupons of the old income bonds maturing on or before April 1, 1881, new income bonds will be issued in the proportion of \$100 of new for every \$300 of old securities. The stock of the new company is fixed at \$21,500,000, and is to be issued for old stock, dollar for dollar. The old preferred stock of the Missouri, Kansas & Texas Company is to be received for new income bonds at par."

"It is provided that within two years after the delivery of the property by the Union Trust Company to the Missouri, Kansas & Texas Company or its successor, an extension of road shall be built or acquired of at least 50 miles into Texas in a southwesterly direction from Denison or Sherman, and within three years an extension of 50 miles from Denison in a southeasterly or easterly direction, an additional 50 miles on one of the two extensions also to be acquired within the three years. Finally, the plan stipulates that it must receive the assent of holders of at least \$10,000,000 consolidated mortgage bonds and \$2,000,000 income bonds within three months from July 28, 1879, in order to be effective."

Naugatuck.—This Connecticut company, which was chartered in 1845, and completed its road in 1849, has had in its 34 years' existence three Presidents—Alfred Bishop, now deceased, W. D. Bishop, afterward President of the New York, New Haven & Hartford, and E. F. Bishop, now President. There have been also three Superintendents—Philo Hurd, Charles Waterbury (deceased), and George W. Beach, the present incumbent. Naturally so old and stable a road has many old employees. Road Supervisor John C. Elleston has been connected with the road from its commencement, and has held his present position for many years. Conductor Alfred Beers has run on the road 29 years, and other conductors have been 20 years with it. One engineer has run on the line ever since it was opened, and many of the employees have grown up on the road and passed all their active lives in its service.

New York Central & Hudson River.—No final action has been taken on the proposed plan for raising the tracks of this road through Rochester, N. Y. The committee to which it was referred considered it best to appoint a sub-committee to confer with officers of the company as to some slight changes in the plans.

New York & Pittston.—The Scranton (Pa.) *Republican* says of this proposed new coal road, heretofore referred to as the Pittston & Hawley:

"The length of the road will be 47 miles, its cost \$800,000, and it will be named the New York & Pittston Railroad. The surveys will be completed and the work of construction actively commenced about the first of next month, and it is expected that the road will be finished in nine months from that time. An offer has been made by the Pennsylvania

Railroad to the effect that if the new road is extended from Pittston to Wilkesbarre, they will run a line from Catawissa to Wilkesbarre, for the purpose of forming a connection which, it is claimed, will prove advantageous to both, as it will afford a short, safe, and direct route to the West. Our reporter's informant, who speaks with authority, says that the construction of the new road is not looked upon with any degree of jealousy by the Pennsylvania Coal Company, since it can in no way be a rival, but on the contrary an advantage."

"The Pennsylvania Coal Company ships only its own coal over the Moosic Mountain by gravity, and in the winter time, when it would be impossible to do so, it could ship over the New York & Pittston line connecting directly with the Erie road. The New York & Pittston road will be exclusively a line for the public, and in every sense of the word a carrying company, a fact which affords considerable satisfaction to individual operators, who will be enabled to ship their coal direct to market on equal terms with all operators. The company will not be interested in mining, nor will the road be leased to the Erie Company as at first reported, although it will doubtless have special contracts with that company. The head-quarters of the new road will be in Philadelphia, where most of its projectors at present reside. It is the intention, in the course of time, should business demand it, to build a branch to the centre of Scranton. The road will be built of rerolled iron rail, furnished by the Reading Coal & Iron Company, it being impossible to obtain steel rails in time to complete the contract, as all the steel mills have orders on hand to occupy them for the next ten or twelve months."

Northern Pacific.—A branch has been located from Casselton, Dak., northwest through the wheat region of Northern Dakota to the Manitoba line, a distance of about 140 miles. Some 70 miles of the line have been located, and it is proposed to build 25 miles of it this season.

Reports continue current that Mr. Mitchell and other large holders of Chicago, Milwaukee & St. Paul stock are trying to secure a controlling interest in this road. It is said that they have already bought a large amount of the preferred stock.

Ohio & West Virginia.—This company has made contracts for the completion of the unfinished tunnels between Logan, O., and Gallipolis. One of these is 900 feet long, with 700 feet yet to be built, and another 500 feet long, with about 300 feet to finish.

Oxford & Henderson.—The contract for this road has been let to Col. W. H. Beasley, of Baltimore, for \$62,000. He is to begin work at once, and finish it by January, 1880. The road is to run from Oxford, N. C., eastward to the Raleigh & Gaston road at Henderson, a distance of 14 miles.

Pennsylvania.—The line from Malvern to West Chester has been formally transferred and the payment of the purchase money, \$135,800, made to the West Chester & Philadelphia Company. It is stated that a mortgage will be placed on the road and bonds issued to pay for all improvements and changes to be made.

Bids were to be received at the office of the Engineer of Maintenance of Way in Philadelphia, until Aug. 15, for the grading, masonry and tracklaying of a branch from the main line at Frazer, Pa., to Woodland, 1½ miles. This is apparently to be a new line or connection for the West Chester Branch.

The Philadelphia *Times* says of the plans approved by the board of directors for the new elevated tracks in Philadelphia: "The plan includes a double-track iron bridge across the Schuylkill River contiguous with Filbert street. The approaches on the western side will run north of the grain house, and on the east side just north of the Gas Works. On this side of the river the tracks will continue down on the south side of Filbert street to Fifteenth street. The company has already purchased a large number of the properties along the way, and when the purchases are completed there will be area enough for a roadway sufficient for nine tracks without any interference to the roadway or sidewalks of Filbert street. The grade of the road will be 17 feet higher than the street grade, and thus any obstruction to the streets crossed avoided. The terminus will occupy the entire space between Sixteenth and Merriam streets and Market and Filbert streets, upon which will be constructed a mammoth passenger and freight depot. The landing of passengers will be on the second floor of the depot, while a hydraulic apparatus will lower the freight cars to the street line, the cars also being shifted by transfer tables as desirable. It is estimated that the whole cost of this improvement will be between two and three million dollars. The railroad on Market street will be vacated and the freight cars will run on the line of the rear of the second story floors of the warehouses on the north side of Market street, so that turn-outs can be run in on their second floors from the rear. The West Philadelphia depot will, it is understood, be retained for the transaction of local business."

In Trenton, N. J., Aug. 12, a bill was filed in the Court of Chancery to enjoin this company and the National Docks Railroad Company from building a proposed line from the Point of Rocks in Jersey City to the docks of the National Storage Company in Communipaw. The bill is filed by the Receiver of the Central Railroad of New Jersey and in behalf of that company, and alleges that the proposed branch will be of very great damage to the Central; that it will be of no public use; that it will require a grade crossing of the Central tracks which will be dangerous and a great impediment to traffic, and that the National Docks Railroad Company is not properly organized under the law. The Chancellor granted the usual preliminary injunction, and set the case for hearing at Newark, Sept. 3.

Pennsylvania Railroad in Maryland.—The trouble over the Cumberland & Pennsylvania crossing is not ended, that company having applied for an injunction to restrain the new road from using the crossing which has been laid. Argument in the case will be heard shortly.

Philadelphia Street Railroads.—Philadelphia has 280 miles of street railroad, the cost of which is reported at \$8,855,334, or \$31,626 per mile. They are equipped with 1,190 cars and 6,791 horses, being 4.25 cars and 34.35 horses per mile of track. The earnings of all the roads for last year were \$4,794,378, or \$17,123 per mile; the expenses \$3,807,379, or 79.42 per cent.; the net earnings, \$986,999, being \$3,525 per mile, or 11.15 per cent. upon the cost of road. The dividends paid were \$768,980, amounting to 8.68 per cent. on the cost of road reported.

From the shape and great extent of the city, Philadelphia needs and uses a large number of street lines, and probably has more miles of such roads than any other city in the world of equal population. Just now its people are agitated by a general movement for a reduction of fares from six to five cents, but the companies say that such a reduction would wipe out all their profits.

Philadelphia, Wilmington & Baltimore.—A Beneficial Association has been organized on this road, of which the following account is given in a circular which it has issued:

"This Association has been organized under the auspices of the President and Superintendent of the Philadelphia,

Wilmington & Baltimore Railroad Company, and its membership will consist of permanent employees of that company. Its object is to provide mutual assistance in the event of death or of disability and incapacity for service. The business management of the Association is vested in a board of seven trustees, to be appointed annually, in January, by the Superintendent of the Philadelphia, Wilmington & Baltimore Railroad Company, to whom they will be held responsible by a carefully-arranged system of reports and audits. The revenue of the Association will be derived from an admission fee of one dollar, and monthly dues of fifty cents, collected from each member, and, inasmuch as the Association will be managed without expense, the entire amount so collected will be made available for the benefit of its members. The amount to be paid on account of death or disability, during the balance of the year 1879, is five hundred dollars, and it is confidently believed that the trustees will receive such encouragement from the various classes of employees of the Philadelphia, Wilmington & Baltimore Railroad Company as will enable them, in January next, to announce a very considerable increase to this amount to apply for the year 1880. The success of the Association will, in a great measure, depend upon the interest manifested by the employees in increasing its membership. The fees, dues and benefits will apply from Aug. 1, 1879.

The trustees are J. M. Smith, William H. Langren, James L. Smith, I. N. Mills, S. A. Hodgman, William Crawford, Charles K. Ide.

The officers are Charles K. Ide, President; John Lawson, of Wilmington, Treasurer; Albert Haverstick, of Philadelphia, Secretary.

Pittsburgh & Castle Shannon.—A meeting of stockholders was held in Pittsburgh, Aug. 5. The committee, appointed at a previous meeting to consider the embarrassments of the company, presented a report which proposes a surrender of a part of the company's real estate to its original owners, and recommends that an assessment of \$10 per share be levied on the stock. After a long discussion the report was adopted and a committee appointed to collect the assessment.

Pittsburgh, New Castle & Lake Erie.—There has been quite a lively time over this road, growing out of dissensions between Superintendent Ramsey and Vice-President Negley. Lately Mr. Ramsey tendered his resignation, which was not acted upon for some time, but was finally accepted at a meeting at which, it is claimed, no quorum voted. Vice President Negley at once took possession of the road and removed all of Mr. Ramsey's employees, but on the following day that gentleman procured a temporary injunction, took possession of the road again and replaced all the old men. For several days he continued in possession, running the road, but the trouble had been referred to a committee and a compromise was at last reached. Mr. Ramsey renewed his resignation as Superintendent and Chief Engineer, his salary to continue until Oct. 1; Gen. Negley also tendered his resignation as Vice-President, and the board accepted both, accompanying the action with resolutions expressing the highest respect for both parties and regret for their unfortunate differences. So peace reigns once more.

Portage & Freeport.—This company has been organized to build a railroad from Portage, Wis., southward to Freeport, Ill., about 90 miles. The capital stock is fixed at \$1,000,000. The incorporators are all connected with the Wisconsin Central Company.

Quarantine Regulations.—Mr. James C. Clarke, General Manager of the Chicago, St. Louis & New Orleans Railroad has issued a circular to the managers of Southern railroads and roads leading from and to the Southern States, suggesting a meeting in November to adopt measures looking to more reasonable and intelligent quarantine regulations, to be established by act of Congress, in accordance with suggestions offered by such a convention.

Quebec, Montreal, Ottawa & Occidental.—The extension of the Western Division from Hull, P. Q., to Aylmer, eight miles, was formally opened for traffic Aug. 6. This makes the line 125 miles long from Hochelaga.

Rockville.—This short road, which connects the town of Rockville, Conn., with the New York & New England, has been worked by that company under a lease which expired this month. A new lease has been concluded for three years at \$4,800 per year rental.

St. Louis, Keokuk & Northwestern.—The ballasting and finishing up of the extension from Clarksville, Mo., to Dardene is completed, and trains will next week begin to run between Keokuk and St. Louis by this route, using the St. Louis, Kansas City & Northern track between Dardene and St. Louis. Two through trains a day will be run, making the distance, 170 miles, in about 8 hours. The company has recently received six engines, five passenger and two baggage cars and 150 freight cars in preparation for the extra business from the extension.

South Branch.—There is a local movement looking to the completion of this road. Officers of the Baltimore & Ohio state that that company will complete the road according to agreement if it can be shown that there is a reasonable prospect of securing a paying traffic. The road was graded nearly five years ago from the Baltimore & Ohio at Green Spring Run southward to Romney, W. Va., a distance of 16 miles. An extension of 24 miles, from Romney to Moorfield, is also projected.

Texas & Pacific.—At the annual meeting in Philadelphia, Aug. 12, the stockholders voted to authorize an issue of bonds, not to exceed \$20,000 per mile, to complete the road from Ft. Worth to San Diego, some 1,200 miles.

The report for the year ending May 31 showed the following results:

Balance, June 1, 1878.....	\$216,834.38
Gross earnings (\$4.11 per mile).....	2,136,143.65
Total.....	\$2,352,978.03
Working expenses (65.43 per cent.).....	\$1,397,513.87
Interest, taxes, etc.....	850,083.55
Total.....	2,247,597.42
Balance, June 1, 1879.....	\$105,380.61

The gross earnings, as compared with the previous year, show a decrease of \$195,166.70, or 8.4 per cent.; the expenses, a decrease of \$50,925.51, or 3.5 per cent. The loss in earnings is explained by the loss in traffic caused by the yellow fever and local quarantine regulations.

Utah Southern Extension.—Track-laying on this road has been in progress for some time, and the rails are now down to a point 35 miles south by west from Chicken Creek, Utah, the beginning of this road and the terminus of the Utah Southern.

Waukon & Mississippi.—Several towns on this line have voted a tax in aid of the extension of this road from Waukon, Ia., westward to Decorah, about 16 miles.

Waxahachie Tap.—The grading of this road is all completed from the junction with the Houston & Texas Central near Ennis, Tex., westward to Waxahachie, 12 miles. The

track has been laid for five miles from the junction, and work is in progress.

Western Counties.—Work has been resumed on this road and the contractors advertise for laborers wanted at once at Digby, Weymouth and Yarmouth in Nova Scotia.

West Side & Yonkers.—This company has been organized to build one of the rapid transit lines laid out by the Commissioners in that part of New York known as the "annexed district," which is north of the Harlem River and Spuyten Duyvil Creek. The line follows up the west side, near that of the New York Central & Hudson River road. The capital stock is \$400,000, all of which has been taken.

Wisconsin Central.—President Colby's circular in relation to the proposed plan for adjusting this company's affairs is as follows:

"Our land-grant act, and the charters of the several railroad companies which were consolidated into the Wisconsin Central Railroad Company, vest in that corporation rights which are believed to be of great value, especially in reference to the exemption of its lands from taxation until the cost of its railroad is fully paid. I am advised that, unless the fee of its lands remains in the name of this company, to which the original patents were issued, those rights will be lost, and that a foreclosure sale which would transfer that fee to a new company, not named in these patents, would be fatal to the exemption which is now believed to protect the land-grant against taxation in the possession of our company."

"This question of exemption from taxes involves a liability which is estimated at not less than \$50,000 per annum; and this liability, whenever the Wisconsin Central Railroad Company receives patents for its remaining lands, will probably be largely increased. There is no hope of further exemption from taxation by the Legislature of Wisconsin. The present exemption act is limited by its terms to the present year. The future value of the lands to the bondholders depends, substantially, on the preservation for their benefit of these legal rights. It is true that their validity is yet to be finally established by the courts, but the contingency is too valuable to be thrown away, unless the sacrifice is unavoidable."

"In view of these facts, and after consultation with the holders of large amounts of bonds, and in compliance with their request, the directors have recommended to the stockholders, and the stockholders have ratified, the following plan of reorganization. This plan is believed to preserve these rights to the bondholders, and to give them at the same time complete control over the property and its future management. It also avoids those losses and that depreciation which usually result from foreclosure, and which are often so unavoidable."

"The fixed payments which are absolutely promised are graduated on the basis of net earnings; and are believed to fall within the assured income of the property. The contingent payments depend on its developments and its increased productiveness in the future."

"The plan is intended and is believed to cover the following points:

1. To give the bondholders, through a board of directors chosen by themselves, the substantial possession and complete legal control of all the property, until their debt is paid out of its proceeds and earnings.

2. Not to allow the stockholders to receive anything out of the property until the entire mortgage indebtedness on Jan. 1, 1879, is rendered secure, and is, in its new form, receiving regularly an average interest of 6 per cent.

3. To retire the land income notes, substituting for them bonds which draw a lower rate of interest; and thus to effect a saving for the present bondholders of more than \$19,000 per annum, and to restore thereafter all proceeds of future land sales to the sinking fund for the redemption of the bonds.

4. To put all holders of overdue coupon bonds upon an equal footing with those who joined in the funding scheme of July 1, 1875.

5. To save for the benefit of the property, and primarily for the bondholders, all the legal rights of the present company, especially those relating to taxation, which cannot be acquired by or transferred to any new corporation.

6. To give 40 per cent. of the present bonded indebtedness a fixed and certain income, and a consequent present market value; and to secure to the remaining 60 per cent. all the residue of net income from the property until that net income pays 6 per cent. on the whole amount of bonded debt as it stood on Jan. 1, 1879.

7. To preserve the present mortgage lien for the bonded debt in its new form, so that no present security will be lost by any bondholder while the exchange is being made.

8. To adjust all outstanding equities among the present bonds, so as to give each shareholder the exact present worth of his security, dollar for dollar, in the new bonds; and to make the adjustment upon the same principle on which these equities would be adjusted in court after foreclosure sale."

Wisconsin & Minnesota.—This company has filed articles of incorporation in Wisconsin for a railroad from Medford, on the Wisconsin Central road, westward through Wood, Marathon, Taylor, Clark, Eau Claire, Chippewa, Dan, Pierce and St. Croix counties to the Mississippi River, about 120 miles. The capital stock is \$2,000,000. The incorporators are all connected with the Wisconsin Central.

ANNUAL REPORTS.

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St. Louis, Alton & Terre Haute.

This company owns a line from Terre Haute, Ind., to East St. Louis, Ill., 191 miles; a branch from Alton Junction, Ill., to Alton, 4 miles, and a branch from East St. Louis to Belleville, 15 miles. It leases the Belleville & Southern Illinois road from Belleville to DuQuoin, 56 miles. The line worked by the company is the 71 miles (15 owned and 56 leased) from East St. Louis to DuQuoin, the main line and Alton Branch being leased to the Indianapolis & St. Louis Company, at a minimum rental of \$450,000 a year. As heretofore noted, default has been made on this rental and a suit is in progress to enforce the terms of the lease. The report is for the year ending Dec. 31, 1878.

The equipment consists of 13 engines; 11 passenger and 4 baggage, mail and express cars; 80 box, 25 stock, 30 flat, 500 coal and 3 caboose cars. Ten stock cars were added during the year.

The general account was as follows:

Stock (\$22.707 per mile).....	\$4,708,400.00
Bonds (\$33.333 per mile).....	7,000,000.00
Accrued interest on funded debt to Dec. 31.....	144,750.00
Amount due sinking fund.....	630,000.00
Unpaid coupons.....	181,234.77
Balance of income account.....	163,791.85
Total.....	\$12,828,176.82
Stock account (\$20.040 per mile).....	\$11,708,400.00
Accounts and balances due.....	442,276.82
In hands of trustees of sinking fund.....	617,500.00
Total.....	12,828,176.82

Of the stock, \$2,468,400 is preferred and \$2,900,000 common stock. Of the bonds, \$2,900,000 are first mortgage, \$2,900,000 second mortgage preferred, \$1,700,000 second mortgage income and \$900,000 equipment bonds.

The traffic of the 71 miles worked is reported as follows:

	1878.	1877.	Inc. or Dec. P. C.
Passengers carried.....	184,988	190,643	D. 5,655 3.0
Passenger mileage.....	3,645,357	4,005,563	D. 360,206 9.0
Tons freight carried.....	158,290	163,138	D. 4,878 3.0
Freight tonnage mileage.....	7,500,742	8,180,052	D. 679,310 8.3
Tons coal carried.....	315,388	307,057	I. 8,331 2.7
Coal tonnage mileage.....	8,518,574	9,090,505	D. 571,931 6.3

	1878.	1877.	Inc. or Dec. P. C.
Average receipt:			
Per passenger per mile.....	2.94 cts.	2.80 cts.	I. 0.14 ct. 5.0
Per ton of freight per mile.....	2.47 "	2.26 "	I. 0.21 " 8.3
Per ton of coal per mile.....	2.26 "	2.21 "	I. 0.05 " 2.3

Of the general freight movement 58.6 per cent. was of through freight between St. Louis and Cairo. The average rate per ton per mile on this business was 1.09 cents, and on the local freight 4.42 cents. From March 15 to Dec. 31 the local freight business from Belleville was done under a pooling arrangement, which kept up rates.

The earnings of this line were as follows:

	1878.	1877.	Inc. or Dec. P. C.
Passengers.....	\$107,347.19	\$112,443.89	D. \$5,096.70 4.5
Freight.....	185,222.00	185,017.80	I. 204.80 1.1
Coal.....	192,704.60	203,832.81	D. 8,068.04 4.0
Mail, express, etc.....	21,094.93	10,683.05	I. 14,411.88 7.2
Total.....	\$506,459.41	\$511,377.57	D. \$4,918.16 0.9
Expenses.....	269,838.13	282,936.30	D. 16,098.23 5.7
Net earnings.....	\$236,621.28	\$228,441.27	I. 8,180.01 3.6
Gross earnings per mile.....	7,133.23	7,296.30	D. 163.07 2.2
Net earnings per mile.....	3,374.95	3,311.28	I. 63.67 1.9
Per cent. of expenses.....	52.69	54.60	D. 1.91 3.5

Of the gross earnings the Belleville Branch furnished \$243,999.82, or \$16,267 per mile, and the Belleville & Southern Illinois \$262,459.59, or \$4,687 per mile.

During the year 875 tons of steel rails and 25,000 new ties were laid; about 1,000 feet of trestle were renewed and other improvements made. The road and equipment were fully maintained.

Arrangements have been made for the extension of the Belleville & Eldorado road from Benton to Du Quoin, and it is expected to be a valuable feeder.

The income account is as follows:

Balance, Dec. 31, 1877.....	\$101,058.69
Rental (minimum) main line.....	450,000.00
Earnings of line worked.....	506,459.41
Interest received.....	5,302.31
Total.....	\$1,062,820.41
Expenses of line worked.....	\$396,838.13
Rental Belleville & S. I. R. R.....	99,551.00
Interest and sinking fund.....	524,000.00
Dividend on preferred stock.....	49,363.00
Main line and legal expenses.....	16,320.44
New stock cars.....	4,150.00
Total.....	950,028.56
Balance, Dec. 31, 1878.....	\$103,791.85

The earnings of the main line as reported by the lessee were as follows:

	1878.	1877.	Inc. or Dec. P. C.
Passengers.....	\$250,382.60	\$232,361.16	I. \$18,021.44 12.6
Freight.....	552,729.87	657,032.18	D. 104,302.31 15.9
Express, mail, rents, etc.....	125,188.88	74,176.70	I. 51,012.12 68.6
Total.....	\$928,301.35	\$963,570.10	D. \$35,268.75 3.6
Expenses.....	708,273.92	775,821.50	D. 67,547.58 8.7
Net earnings.....	\$220,027.43	\$187,748.60	I. \$32,278.83 23.8
Gross earn. per mile.....	4,700.52	4,890.10	D. 189.58 2.6
Net earn. per mile.....	1,128.35	911.53	I. 216.82 23.8
Per cent. of exps.....	76.30	83.46	D. 7.16 8.6

If the minimum rental of \$450,000 was paid, the loss to the lessee would have been \$229,972.57 for the year.

MASSACHUSETTS MINOR RAILROADS IN 1878.

NAME OF ROAD.	PROPERTY.					LIABILITIES.		TRAFFIC.			EARNINGS.				PAYMENTS FROM NET EARN.		
	Miles owned.	Miles leased.	Locomotives.	Passenger train cars.	Freight and other cars.	Bonds.	Other debt.	Train mileage.	Passenger mileage.	Tonnage mileage.	Gross earnings.	Expenses.	Net earnings.	Gross earnings per mile.	Net earnings per mile.	Per cent. of ex-penses.	Dividends.
Ashburnham.....	3	1	1			\$30,000		3,120	9,050	2,517	\$1,100	\$1,053	\$140	\$300	\$49	87.8	
Boston, Winthrop & Pt. Shirley.....	3	1				19,450					3,907	4,375	*408	130		122.2	
Boston, Barre & Gardner.....	36	16	7	11	98	869,002		554,300	263,133	139,109	1,798,825	2,868,493	157,854	116,109	41,745	74.3	\$46,824
Boston, Revere Beach & Lynn.....	9		5	23	10	349,300		1,900	243,549	104,080	4,807,866	121,265	53,941	37,324	13,474	11.542	\$15,000
Cheshire.....	54	10	30	32	420	2,153,300		896,500	26,312	603,191	3,949,339	32,278,235	535,723	403,703	132,020	8.571	50,184
Fall River.....	12					200,000		200,000	61,933	30,563	451,091	39,947	26,037	13,910	3,329	15.99	\$21,000
Grafton Centre.....	3	1	1	3		29,830		10,000	3,300	14,085	66,981	3,905	3,202	793	1,332	204	210
Hanover Branch.....	3		2	6	18	123,950		35,000	210	22,981	304,660	27,667	18,216	9,451	3,458	1,181	2,980
Martha's Vineyard.....	9		1	4		40,000		36,000	38	7,140	231,512	7,052	4,880	2,163	784	240	3,714
New Haven & Northampton.....	60	10	20	30	429	2,460,000		2,181,000	236,093	383,213	5,455,832	11,889,310	548,200	341,953	206,547	1,895	159,288
New London Northern.....	100		22	22	280	1,500,000		687,500	180,988	420,580	4,765,084	11,610,469	501,442	340,846	160,596	5,014	45,125
Norwich & Worcester.....	49		18	18	574	2,604,460		400,000	31,929	418,111	6,397,526	14,193,339	396,863	312,336	12,030	5,294	35,769
Springfield, Athol & N. E.....	40		3	8	16	816,480		600,000	27,831	102,004	829,056	1,117,465	160,924	69,945	2,060	832	7,918
Worcester & Shrewsbury.....	3		4	6	5	36,825		8,000	7,308	30,000	295,110	9,841	8,485	1,356	3,280	86.3	620

* Deficit.

The figures given above are from the reports made to the Massachusetts State Commission for the year ending Sept. 30, 1878, and include all roads whose reports have not heretofore been presented in another form, or included in lessee's reports.

The New London Northern is leased to and worked by the Central Vermont; the Norwich & Worcester by the New York & New England. The Springfield, Athol & Northeastern has been sold under foreclosure and reorganized since the close of the year.

Five roads—the Boston, Revere Beach & Lynn, the Boston, Winthrop & Point Shirley, the Grafton Centre, the Martha's Vineyard and the Worcester & Shrewsbury—are of 3-ft. gauge. All of these five do a passenger business exclusively, carrying no freight.

Of the trouble with the lessee of the main line the report says: "The Indianapolis & St. Louis Railroad Company, lessee of this portion of your road, defaulted in the payment of the monthly instalment of rental, falling due for April, 1878, and subsequent to that time has declined to pay any rental, except as hereinafter stated. This was the first default or disturbance of our pleasant relations with the lessee company; and the only excuse assigned for the failure to pay was the alleged onerous terms of the lease, resulting from increased and sharp competition, combined with the general depression in business; so, in order to force your company into a modification of the lease, the lessee company refused to pay even the net earnings of your own road on their rental account. The guarantor companies also declined to make any payment under the contract of guaranty, unless your company would abate one-third of the annual rental, and accept from them, or the lessee company, two-thirds of the agreed rental, or \$300,000 per annum, instead of \$450,000 reserved in the lease. They insisted upon this reduction, upon the theory that of the three guarantor parties, one (the Indianapolis, Cincinnati & La Fayette Railroad Company) was insolvent, and therefore its co-obligors should pay but one-third each of the reserved rent. Every expedient was resorted to, in order to avoid a legal conflict, until it became apparent that the policy of the guarantor companies, managers and owners of the lessee company, was to force a modification of the terms of the lease, or cancel the same, by driving your company into bankruptcy, by withholding the rental, upon which we mainly depended for the payment of the interest on our bonded obligations. This accomplished, and controlling, as they do, the only links of road between Terre Haute, the eastern terminus of your line, and Indianapolis, your road would become an easy prey. Not being able to defer our interest payments any longer, eminent counsel were consulted as to our legal rights under the existing lease, and in accordance with their joint opinion, a bill in Chancery was filed in the United States Circuit Court for the District of Indiana, on Oct. 25, 1878, to compel a specific performance of the lease, and of the guaranty contracts by the obligors therein. The bill being filed, a motion was made by plaintiff, to require the lessee company to pay 30 per cent. of the gross earnings of your road into Court, and the merits of the case were then fully argued by eminent counsel on both sides. The suit was retained and the motion granted. Accordingly, a rule was entered and served upon the Indianapolis & St. Louis Railroad Company, requiring the payment into Court monthly, 30 per cent. of the gross earnings of your leased road, under the lease, and the same has been complied with, from the date of the order, to wit: from the 26th day of October, 1878. By the same order, the guarantor companies are enjoined from collecting from said lessee company the interest on its bonds, owned by them respectively, upon the theory that in equity the lease obligation is the prior claim upon the net earnings of both the leased and proprietary roads, as against the interest claims of the guarantor companies, who are the real owners of the Indianapolis & St. Louis proper.

"The failure of our lessee company to meet the rental payments made it necessary for your company to defer the payment of its interest obligations on its second-mortgage preferred bonds accruing due Aug. 1, 1878, until Jan. 1, 1879; and that due Nov. 1, 1878, to April, 1879. The payment of interest on the income and equipment bonds will probably have to be deferred until the termination of the pending litigation, when it is confidently expected that more than sufficient funds will be realized to meet the deferred payments.

"In the meantime, the 30 per cent. of gross earnings to be paid into court by the Indianapolis & St. Louis Company, and the net earnings of the Cairo Short Line Division of your road will barely be sufficient to pay the interest accruing on the first and preferred second-mortgage bonds. The court payments will probably average something over \$20,000 per month, while the rental charge under the lease is \$37,500 per month. No part of the rental accruing due from April 1, to Oct. 26, 1878, has been paid.

"The lessee company has not complied with its lease obligation to operate and maintain your line after the manner and condition of a first-class western railroad, in principle, that it has continued to lay rerolled iron rails, instead of steel, and has neglected to ballast the same with stone or gravel. These are the principal causes of the large percentage of operating expenses to earnings. Prior to the transfer of the road under the lease, your company began to ballast the track, and transferred with the lease a good gravel pit and all the necessary appliances for this work, but the lessee company at once abandoned it. For a mud ballast and iron rail track, the road is fairly maintained."

St. Louis & San Francisco.

This company, successor through foreclosure to the Atlantic & Pacific Company, owns a line from Pacific, Mo., 37 miles west of St. Louis, to Vinita in the Indian Territory, 297 miles. Of this 299.5 miles, from Pacific to the Missouri line, are owned directly; the remaining 34.5 miles (which were not included in the foreclosure sale) through ownership

of all the securities of the Atlantic & Pacific Company. The following statements are for the year ending Dec. 31, 1878:

The equipment consists of 29 engines; 10 passenger and 8 baggage, mail and express cars; 261 box, 259 stock and 293 flat and ore cars; 23 service cars.

The company has a large land grant, from which 37,774 acres were sold during the year for \$171,756.62. Total receipts of the Land Department from land contracts, royalties on mineral lands, etc., were \$147,803.93; disbursements (including \$54,420.81 for taxes and \$101,629.21 for redemption of bonds) were \$162,050.68, reducing the balance on hand from \$18,928.10 at the beginning of the year to \$4,639.85 at its close.

The general account is as follows:

Stock issued (\$90,184 per mile).....	\$21,642,100.00
Bonds (\$16,183 per mile).....	5,292,000.00
Bills payable, etc.....	78,430.65
Coupons outstanding.....	216,969.00
Profit and loss.....	130,430.91
Total.....	\$27,354,980.56
Road and equipment (\$82,348 per mile).....	\$26,927,791.79
Cash and other assets.....	427,174.77
Total.....	\$27,354,980.56

Of the stock \$8,305,600 is common stock, \$9,677,200 preferred, and \$3,659,300 first preferred stock. The total amount authorized is \$25,000,000. Of the bonds above \$318,500 bear 6 per cent., and \$4,973,500, for the present, bear only 3 per cent. interest. The company is also responsible for \$7,144,500 South Pacific first-mortgage 6 per cent. bonds, subject to which the road was sold, and which are not included in the above statement, and which bring the bonded debt up to \$12,436,500, or \$38,032 per mile, with a yearly interest charge of \$596,985, or \$1,895 per mile.

The earnings for the year were as follows:

	1878.	1877.	Inc. or Dec.	P. c.
Passengers.....	\$195,133.61	\$230,242.57	D.	33.5,108.96 15.3
Freight.....	947,377.84	1,023,909.89	D.	76,532.05 7.5
Mail and express.....	52,803.40	54,121.03	D.	1,227.63 2.3
Miscellaneous.....	6,246.78	15,670.27	D.	9,423.49 60.1
Total.....	\$1,201,651.63	\$1,323,943.76	D.	\$122,292.13 9.2
Expenses.....	598,134.90	673,572.56	D.	75,437.66 11.2
Net earn.....	\$603,517.03	\$650,371.20	D.	\$46,854.17 7.2
Gross earn. per mile.....	3,074.78	4,048.70	D.	373.98 9.2
Net earn. per mile.....	1,845.02	1,988.91	D.	143.89 7.2
Per cent. of expenses.....	49.78	50.88	D.	1.10 2.2

The low proportion of expenses may be partly explained by the fact that the company is able to charge higher rates on a large part of its traffic than many roads can secure.

The only payments reported from net earnings are \$554,965.27 for interest, leaving a balance of \$48,551.76 for the year.

The traffic for the year was as follows:

	1878.	1877.	Inc. or Dec.	P. c.
Train mileage.....	255,200	258,108	D.	2,918 1.1
Passenger.....	617,336	558,967	I.	58,369 10.4
Freight, etc.....	872,926	817,075	I.	55,851 6.8
Total.....	1,490,262	1,375,183	I.	115,079 8.4
Passengers carried.....	63,132	55,736	I.	7,396 13.3
Passenger mileage.....	4,933,984	5,093,313	D.	159,329 2.6
Ton freight carried.....	254,380	254,386	D.	6
Tonnage mileage.....	41,207,457	39,824,417	I.	1,383,040 3.5
Av. train load:				
Passengers, number.....	16.33	19.62	D.	0.29 1.5
Freight, tons.....	66.75	71.24	D.	4.49 6.3
Av. receipt:				
Per passenger per mile.....	3.95 cts.	4.54 cts.	D.	0.59 ct. 13.0
Per ton per mile.....	2.30 "	2.57 "	D.	0.27 " 10.5

Rates were reduced on local business by the enforcement of the Missouri law regulating charges.

Since the close of the year the company has added to its property the 37 miles of the Joplin Railroad, and the 84 miles of the Missouri & Western, making now 448 miles owned and worked. It has also begun, through an organization known as the St. Louis, Wichita & Western Company, an extension of the Missouri & Western line from Oswego, Kan., to Wichita, 142 miles.

Sandersville & Tennille.

This road may be taken as an example of a successful short branch line built and managed on economical principles. It extends from Sandersville, Ga., to the Central Railroad of Georgia at Tennille, 3.25 miles, and has 0.25 mile of sidings. It is equipped with one engine and one passenger car. It is of 5-ft. gauge, the same as the Central, and is laid with old rails, 30 lbs. to the yard, bought from that company.

The total cost of the road, which was built in 1876, is re-

ported at \$18,850, or \$5,800 per mile. For the year ending July 31, 1879, the operations were as follows:

Gross earnings (\$1,336.81 per mile).....	\$4,344.63
Expenses (\$4.57 per cent.).....	2,370.89

Net earnings (\$807.30 per mile).....\$1,973.74

As compared with the previous year there was an increase of 11 per cent. in gross earnings, a decrease of 9 per cent. in expenses, and a corresponding increase in net earnings.

The net earnings were 10.47 per cent. on the cost of the road, which seems to be earning a good return for the investment, besides being a great convenience to the public.

Rutland.

This company owns a line from Bellows Falls, Vt., by Rutland to Burlington, 120 miles, and it controls and leases the Addison Railroad from Leicester Junction, Vt., to Ticonderoga, N. Y., 16 miles. The whole property is leased to the Central Vermont Company, and the report presented for the year ending June 30, 1879, relates only to the financial affairs of the company.

The general account is as follows:

Common stock.....	\$2,480,600.00
Preferred stock.....	4,000,000.00
Total stock (\$54,005 per mile).....	\$6,480,600.00
Bonds outstanding (\$21,220 per mile).....	2,546,406.00
Dividend scrip and unpaid coupons.....	74,609.99
Bills payable.....	331,223.03
Total.....	\$9,432,833.02
Construction, etc. (\$74,527 per mile).....	\$8,943,257.06
Addition R. R. securities.....	457,800.00
Rent due and unpaid.....	31,500.00
Cash on hand.....	295.36
Total.....	9,432,833.02

The outstanding bonds consist of \$104,200 mortgage equipment bonds, \$1,337,100 first-mortgage bonds and \$1,106,100 mortgage 5 per cent. The liabilities of the company, excluding mortgage bonds, and the assets are as follows:

Old Rutland & Burlington bonds and interest.....	\$39,918.87
Bills payable.....	331,223.03
Equipment bonds outstanding.....	104,200.00
Dividend scrip and interest.....	84,399.52
Total liabilities.....	\$559,741.42

First mortgage bonds on hand.....	\$102,900
Mortgage bonds, 5 per cent.....	394,900
Addition R. R. stock.....	332,800
Rent due and unpaid.....	27,500
Five per cent. bonds received in exchange for equipment bonds bought.....	118,300
Real estate, estimated cash value.....	30,000
Total.....	1,066,400.00

Excess of assets.....\$506,658.58

Reducing all assets to a cash value, it is estimated that the sale of the bonds and real estate would pay all liabilities, leaving the Addison stock on hand.

The income account was as follows:

Cash on hand, July 1, 1878.....	\$1,363.62
Rent of road, 11 months.....	296,000.00
Rents of real estate.....	728.45
Interest on receivables.....	\$9,084.00
Discount on equipment bonds bought.....	28,000.00
Mortgage 5 per cent. bonds sold.....	1,105,100.00
Total.....	\$1,430,276.07
Coupons.....	\$185,660.00
Dividend scrip and interest on same.....	210,093.11
Interest account.....	29,438.16
Rent of leased roads.....	59,000.00
Salaries, taxes, etc.....	17,054.32
Bills payable paid.....	32,005.03
Equipment bonds exchanged.....	895,800.00
Total.....	1,429,080.71

Balance, cash on hand, July 1, 1879.....\$205.36

President Page's report says: "In consequence of the great reduction of our rent under the modified contract of lease, as stockholders are aware, it became necessary for us to ask of the holders of our equipment bonds, maturing in 1880 to exchange their bonds for the new 5 per cent. bonds running 20 years; and also to ask our first-mortgage 8 per cent. bondholders to reduce their interest to 6 per cent. I am happy to be able to report to you on this subject, that all of the equipment bonds of both classes have been converted into the 5-per-cent. bonds, except \$104,200, and that \$1,203,000 of the 8-per-cent. first-mortgage bonds have been stamped to 6 per cent. It may be confidently expected that the holders of the remainder, both of the equipment and first-mortgage bonds, will eventually come into this arrangement, thus effecting an annual saving of \$55,000 in interest."

It was stated at the meeting that if the credit of the company should so improve that the 6-per-cent. bonds could be sold at par, the proceeds, with the surplus incomes of the current year, would substantially provide for the floating debt. With that out of the way, the assured income from rentals, etc., would pay all charges and leave a surplus of \$90,000, or 2 per cent. on the preferred stock.